The

World's Work

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AUGUST, 1925

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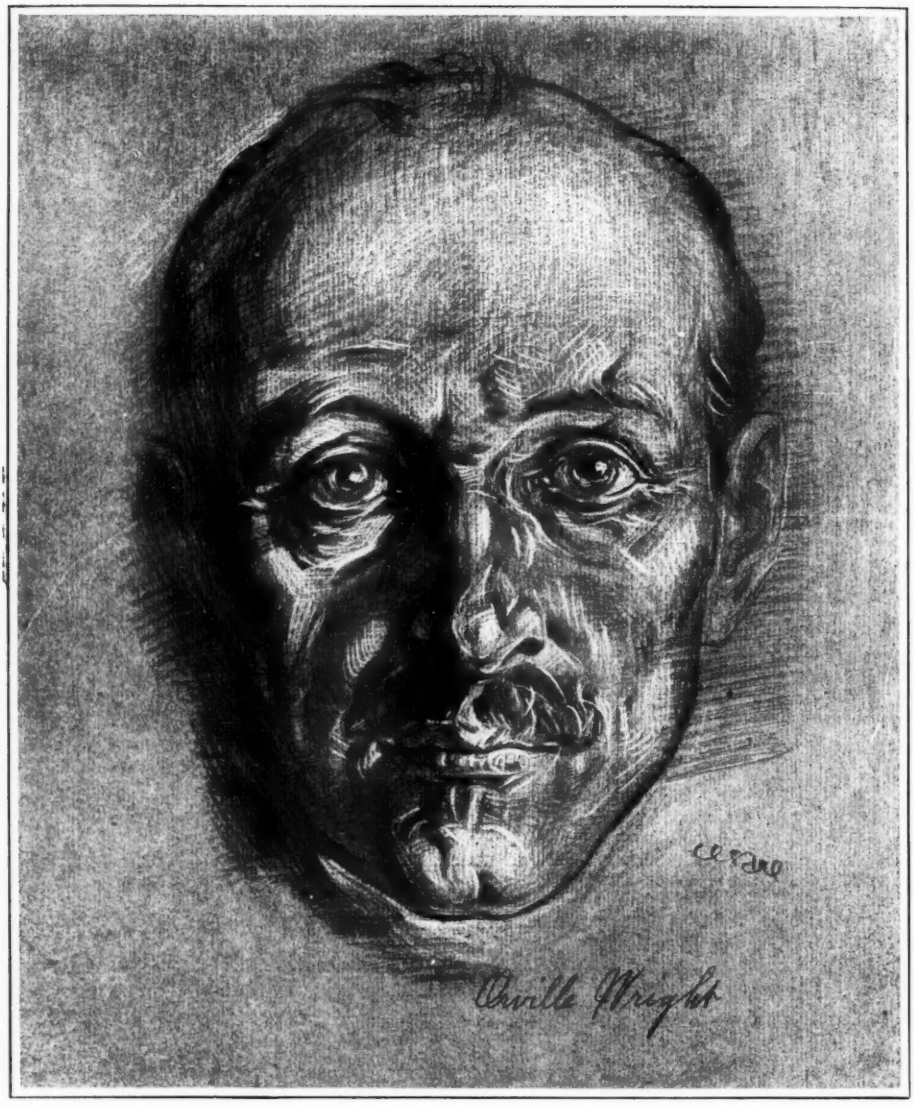


ORVILLE WRIGHT

Who, with his brother Wilbur, was the first to fly in a heavier-than-air machine, and who is fifty-four years old this month, sees the airplane entering a new epoch of usefulness, with many new commercial air routes planned or in operation, and with planes being used in Arctic exploration by both Amundsen and MacMillan. This drawing was made recently at Dayton, Ohio, by Oscar Cesare and autographed.

THE
WORLD'S WORK

AUGUST, 1925

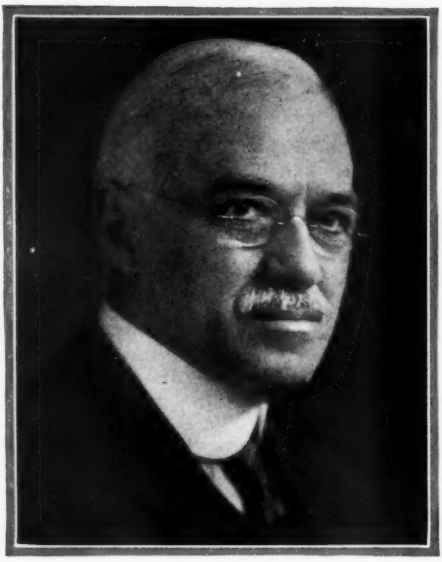
VOLUME L NUMBER 4

THE MARCH OF EVENTS

THE President's speech on the budget recounts the success of his economy policy. The governmental expenditures have been reduced to the neighborhood of three billions a year—about three times our pre-war expenditures. In 1914 the interest on the public debt was $23,000,000. For the year 1925 it is approximately $870,000,000. That is a difference of about $850,000,000 due to the war. The Veterans' Bureau and vocational training cost about $380,000,000, which is a direct result of the war. The Shipping Board and Emergency Fleet cost about $30,000,000. These expenses make up a billion and a quarter of the two billion increase. The increased cost of the Army and Navy amounts to another $360,000,000 and the Federal appropriations for state aid amount to another $75,000,000. These items account for most of the two billion increase over the pre-war cost of government. Most of the increases since 1914 were due to the war and most of the decreases since 1918 are due to the war's having ceased. The efforts of the President and the Director of the Budget have kept regular expenses down in a time of rising costs,

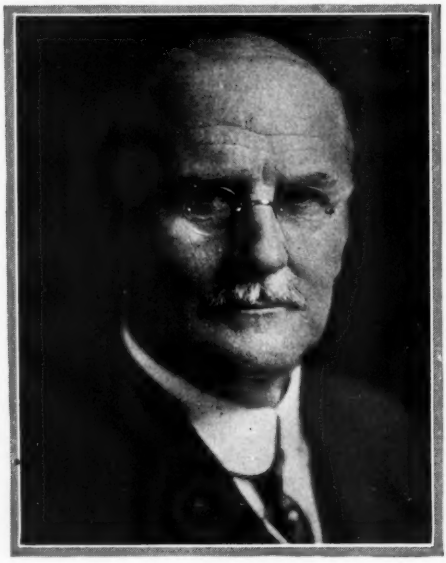
Having reached this point, further reductions must come slowly. The public debt has fallen from $23,977,000,000 in 1921 to $20,551,000,000 in 1925. The yearly interest has fallen from about $1,000,000,000 to $870,000,000. But there is no way to reduce this rapidly from year to year. It would not have come down as fast as it has except for able financing by the Treasury, which has converted securities of high rates of interest to securities of lower rates. The expenditures on the veterans of the war are not likely to decrease, nor are the expenditures for the Army and Navy, which are now as low as they should be. The expenses of the Shipping Board and Emergency Fleet could and should be lopped off, as well as the $75,000,000 for state aid. To keep the proper activities of the Federal Government up with the growth of the country will continue to cost more, and the only way to meet that without increasing expenses is to weed out the improper activities in which the Federal Government is engaged and stop them.

It is a very cheerful fact that the prosperity of the country gives a surplus under present taxes, for that means we can have tax reduction out of our prosperity. It is going to be difficult to get much more tax reduction out of economy.



Dr. William H. Park

Albert Edward Wiggam



Charles H. Norton

Niels Bohr

LEADERS IN SCIENTIFIC THOUGHT AND ACHIEVEMENT IN VARIOUS FIELDS

Niels Bohr is the Danish scientist who has been honored by universities and scientific societies in this country for his work on the atom, which is described in an article entitled "The Almighty Atom," on page 414 of this magazine. With Orville Wright, whose picture appears as a frontispiece, Charles H. Norton of Worcester, Massachusetts, was among the four "ingenious mechanics," whose "useful inventions" won the honor of the famous John Scott medal, Mr. Norton's recognition being for the development of accurate grinding devices of high power. Albert Edward Wiggam is the author whose scientific writings have been hailed as a great clarifier of scientific thought for the lay mind, and whose article on "The Religion of the Scientist" appears on page 391 of this magazine. Dr. William H. Park is the physician and bacteriologist who has been honored for his scientific researches and his work as President of the American Public Health Association.

Admiral Robison

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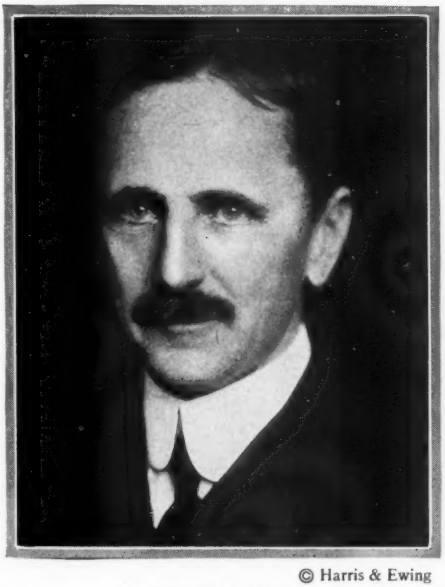
Admiral Williams



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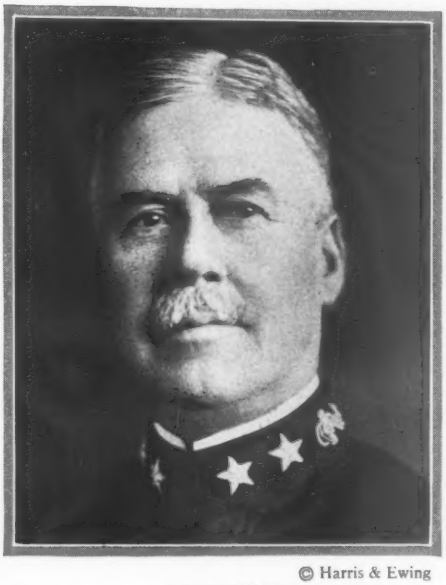

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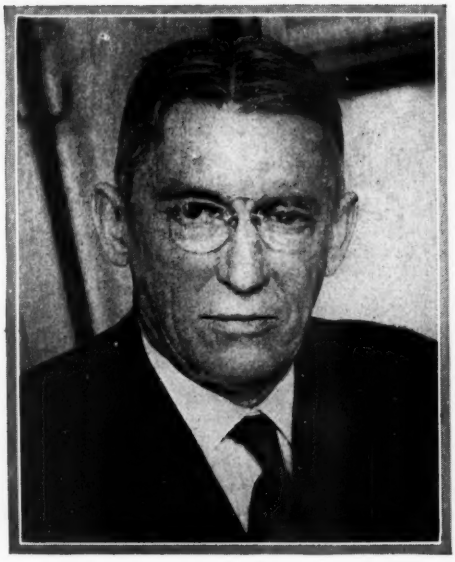
Admiral Welles

THEY WILL COMMAND THE AMERICAN NAVY ON THE SEAS

Upon completion of the Australia-New Zealand cruise Admiral S. S. Robison, now in command of the battle fleet, succeeds Admiral Robert E. Coontz as commander-in-chief of the United States fleet. Admiral Robison will be succeeded in command of the battle fleet by Rear-Admiral C. F. Hughes. Other important promotions are those of Rear-Admiral Richard H. Jackson to command the battleship divisions of the battle fleet, with rank of Vice-Admiral; Rear-Admiral Clarence S. Williams to command the Asiatic fleet, with rank of Admiral; and Rear-Admiral Roger Welles to command the American naval forces in European waters, with rank of Vice-Admiral. These promotions leave the fleets in command of officers who have had the benefit of intensive work recently in the study and practice of strategy and tactics.



Lincoln C. Andrews

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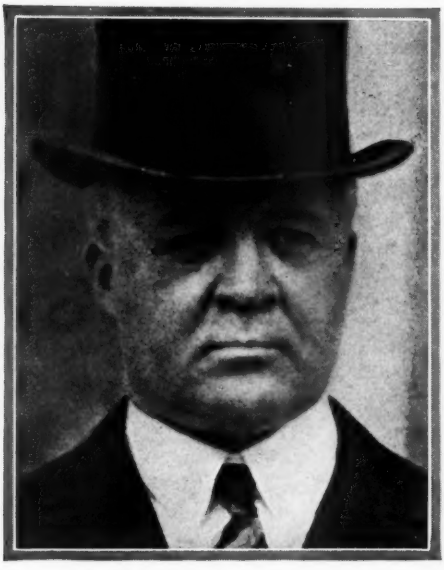

Robert E. Olds

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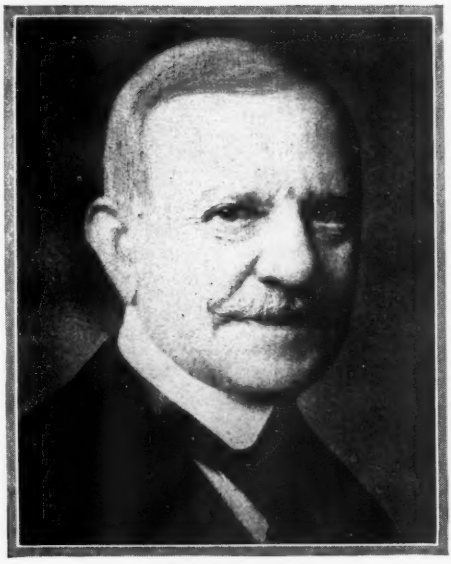
Harry E. Hull

NEW FACES IN THE GOVERNMENT AT WASHINGTON

In turning his attention upon political policies in the Northwest, President Coolidge has followed the appointment of Secretary of State Kellogg with two other appointments from Minnesota—William D. Mitchell to be Solicitor-General, succeeding James M. Beck, and Robert E. Olds to be Assistant Secretary of State, succeeding John V. A. MacMurray, recently appointed Minister to China. An appointment from the Middle West is that of former Representative Harry E. Hull of Iowa to be Commissioner-General of Immigration, succeeding W. W. Husband, who becomes Second Assistant Secretary of Labor. Another important appointment was that of Brigadier-General Lincoln C. Andrews to direct the Treasury's squads in the enforcement of the Volstead law, who started at his new task with a plan of reorganization.



Daniel Guggenheim

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General Fechet

W. Irving Glover

Major Hensley

ACTIVE IN THE ADVANCEMENT OF THE SCIENCE OF AËRONAUTICS

With the aim of increasing the general usefulness of man's means of flight, Daniel Guggenheim, the New York copper man and financier, has given $500,000 to New York University for the establishment of a School of Aëronautics. Major William N. Hensley, Jr. is the commandant of the Army Air Fields on Long Island, where the annual Pulitzer trophy airplane races are to be held in October with the same general purpose of advancing the science of aëronautics, and among the participants will be many of the aviators of the Army Air Service, of which Brigadier-General James E. Fechet is the new assistant chief, succeeding William Mitchell. One of the men who will take advantage of new developments is W. Irving Glover, the new second Assistant Postmaster-General in charge of the Air Mail Service.

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GARRARD B. WINSTON

The Under-Secretary of the Treasury, who has charge of the affairs affecting foreign loans and has taken an active part in the negotiations for the refunding of the loans made in war time to our late allies.

Stability in Western Europe

THE security pact now being discussed between Great Britain, France, Belgium, and Germany is a most encouraging sign, for, if ratified, it will provide a basis of political stability in western Europe which has been lacking since 1918. Its essential features are that these nations mutually guarantee the boundaries of Belgium and France, where they touch Germany, from attack by either side. The pact is to be administered under the League of Nations and the provisions of the covenant requiring arbitration are to apply as well as is the League's definition of what is aggression.

Clemenceau proposed his tripartite guarantee at the time of the Versailles Treaty. But in that document France was to be protected by both Great Britain and the United States from German aggression, but Germany could not claim protection against France. The present pact is much like our arrangement with the British and Japanese in the Pacific except that the European powers agree to make their guarantee good by force, while the Pacific pact calls for consultation —which would probably mean the use of force against any serious violation. It follows very closely the regional scheme which Lord Robert Cecil proposed several years ago.

During the seven years since the war the idea of a security pact has been growing both by discussion and by example. The possibilities and limitations of the scheme have been clarified by constant analysis. At the same time the various nations have come to have a clearer picture of their political possibilities as well as of their economic possibilities. The French tried very hard to get the British to guarantee the boundaries of the French allies: Poland, Czecho-Slovakia, and Rumania. Britain at times felt indisposed to do any guaranteeing at all on the Continent. Little by little the common ground that could be reached by all began to be apparent. The Germans deserve much credit for presenting the plan, and to Mr. Austen Chamberlain and M. Briand are due the thanks of the world for uniting upon it as a solution of the most troublesome single problem in Europe—the German-French frontier.

If this pact is ratified, it will intensify the British desire for peace on the Continent. It will enable the French to look with more assurance upon their German frontier and in time will lead to modification of their military burdens. To the Belgians it restores the *status quo ante bellum*. They have the same guarantees they had before and by the same nations. To Germany the pact will give a guarantee of her frontier which under the disarmament clauses of the Versailles Treaty she cannot herself do much to defend. By her admittance to the pact she begins to regain caste, becomes again a member of the society of nations with whom other nations deal on an equality. This is further accentuated by her admission to the League of Nations, for which the pact provides. This admission to the League has another advantage to Germany. She has given up any idea of changing her western frontiers fixed by the Versailles Treaty, but she has never given up hope of adjusting some of her eastern boundaries. As a member of the League of Nations, under Article XII Germany can bring her grievances before the League for arbitration and, if her neighbors will not submit to arbitration, under Article XV she can get a report on her grievance by the Council of the League.

The security pact has many advantages. It provides a fair and workable basis for western Europe under present conditions. The provisions of the League of Nations which it embraces give it a kind of balance and elasticity which make it more likely to fit changing conditions. Some of the commentaries upon it claim that it substitutes a general agreement for two rival camps. This is not necessarily true. It is just as possible for two rival coalitions to form within the League as within the old society of nations. Germany and France are quite as likely to head the rival parties within the League as they did before the war outside it. Nothing in the League prevents French diplomacy from forming

a friendship with the Little Entente, nor will it prevent Germany drawing towards her what countries she can. And Great Britain is taking her traditional rôle as arbiter between the continental rivals. Great Britain's guarantee of the Rhine frontier restores her to that position. The two most powerful nations on the Continent admit that they cannot find a solution for their most vital need—national safety—except with British help. In other less vital matters these two countries are not likely to agree and Great Britain will often be in a position to have the deciding vote. That vote and the influence behind it are almost certain to be for peace, for war on the Continent is a direct blow at the industrial and commercial system on which Great Britain must live.

Caillaux's First-Aid Measures

AFTER giving his country a fair warning of the seriousness of the financial situation, and waiting a few weeks for this warning to sink in, Caillaux has succeeded in forcing through both the Chamber and the Senate the drastic measures he found necessary to meet the most serious immediate difficulty: the huge amount of short term loans falling due during the present year.

The total of these Caillaux refrained from giving in his general warning, and it is a striking fact that all recent statements on the subject have mentioned only the amounts falling due during the summer months. But in his last debate before the Senate, an hour or so before his ministry fell, Herriot disclosed the full figures for the year as follows:

February 1st,	333,000,000 francs
July 1st,	3,290,000,000 francs
September 25th,	8,236,000,000 francs
December 8th,	10,090,000,000 francs
	21,949,000,000 francs

Herriot gave as his excuse for overdrawing his account at the Bank of France, the necessity of meeting impending short term loans. But now Caillaux reports that after paying only the small February installment this overdraft of 4,000,000,000 francs has already been spent on the deficits of the current budget. The Treasury has now no funds for meeting the three billions due in July, to say nothing of the appalling totals in prospect later in the year.

To meet these debts Caillaux turned in two widely divergent directions. First of all, to make the July payments and to give the Treasury a certain margin, he obtained authorization to issue an additional 6,000,000,000 francs of paper money. This, coming on top of Herriot's 4,000,000,000, will raise the limit of bank note circulation to 51,000,000,000 francs; which is 10,000,000,000 more than the figure of 1920, and wipes out at a stroke all the painful efforts made during the past five years to reduce inflation. It will also tend to accentuate seriously the fall of the franc, and any further marked decline, apart from other hardships, will increase correspondingly the 4,000,000,000 franc deficit already expected for the 1925 budget. For the past year or more, every party and every political leader in France has been standing solidly on the ground of no further inflation under any circumstances—but as things stood no other alternative offered, and even Caillaux's political opponents ended by swallowing the bitter pill.

For meeting the payments later in the year Caillaux will attempt the more normal method of a refunding loan. When the present short term notes were issued there was no expectation that they would be presented in a lump for payment on maturity, as is now happening. Two things, however, have joined to make the French investor ask for his money back and refuse to lend it again to the State. First, the threat that a capital levy would take a considerable slice out of his principal, and next the growing conviction that a continued depreciation of the franc would diminish the value of both principal and interest.

Caillaux has stood out flatly against the capital levy and evidently has already reassured the public fairly well on that score, and he has now hit upon an in-

genious device to tempt the investor to leave his money in the hands of the State. The new loans will be payable in pegged francs—paper francs, but paper with a guaranteed gold value. The lender will thus get his money back, no matter what happens to the franc in the meantime. During the past year or so the French investor has developed a disconcerting desire to protect himself against currency depreciation by putting his money in stocks instead of making the traditional investment in government bonds. Caillaux's device of a fixed parity with gold may offer a satisfactory means of insuring capital against the uncertain course of the franc, and make possible the vast operation which he has in view of refunding the whole floating and short term debt.

The most interesting feature of the project, however, is that it amounts to a first step in the long-awaited devaluation of the franc. Whatever name may be given, and however the fact may be veiled with circumlocutions, the fact remains that the new bonds will represent a loan of what may roughly be called a five-cent franc, instead of a franc nominally worth twenty cents, but actually of an undetermined value. If successful it will provide to the investor or business man a supply of some 20,000,000,000 "preferred" francs, available at any time against variations in exchange.

This first step once taken, it will not be possible to issue any further loans on a different basis; and from that very fact the French debt will gradually be shifted to a gold basis: into francs of a smaller denomination but of a real and fixed value. The result will be the acceptance by the French bondholders of about 25 per cent. of what the government owes them. This partial repudiation is equivalent to their having paid a capital tax of three quarters of the domestic national debt of France.

This opening wedge in a new financial policy has been brought about oddly enough by the parties most opposed to Caillaux personally and to the Painlevé Ministry in general. Whatever the consequence of this as regards the fate of the Painlevé Cabinet, it is henceforward certain that Caillaux's new taxes and other measures of financial reform can be carried through only by the support of the parties most hostile to him when he came into office last April; and this paradoxical situation will give an element of disturbing uncertainty to the whole work of stabilizing French finances during the period to come.

Debts Sixty Years Ago and To-day

IN THE discussion concerning the payment by the Allied nations to us there has been much comment upon the debt the United States owed France for money advanced during the American Revolution and also upon the repudiation of certain state debts, chiefly the debts created by Negro and carpet-bag governments of southern states immediately after the Civil War.

The facts of our financial relations with France are thus set forth by Professor John H. Latané of Johns Hopkins:

Gifts by France to the United States, for which repayment was never demanded or offered:

1776, June 10th	1,000,000	*livres*
1777	2,000,000	"
1781	6,000,000	"
1782, Interest remitted on loan of 1778, approximately	2,000,000	"
	11,000,000	"

Loans repaid in full:

1777, from the Farmers General	1,000,000	"
1778, advanced in 21 instalments, 1778–1782	18,000,000	"
1781, obtained by France from Holland	10,000,000	"
1783, advanced through Franklin	6,000,000	"
(1 *livre* then = 19½ cents)	35,000,000	"

The French Government made gifts to the colonies and also loans. The loans were repaid and the gifts were not.

The facts regarding the repudiation of state debts can briefly be reviewed.

As a result of the great boom in state

banking and internal improvements which were often financed by state bond issues in the 'thirties and 'forties of the last century Florida and Mississippi repudiated bonds to the extent of $14,900,000. Michigan paid thirty cents on the dollar on a bond issue sold to finance a bank. Louisiana in 1843 paid some of its creditors in depreciated bonds, making them accept them at par. These were all frontier states at that time.

After the Civil War states which had been in the Confederacy reduced their indebtedness by repudiation by about $127,000,000. It is only fair to say, however, that this indebtedness which was repudiated was created by Negro and carpetbag governments which were forced on these states by the Federal Government and which did not represent the taxpayers.

Then in 1881 Minnesota refunded bonds issued to build railroads by giving the bondholders other bonds of one half the face value of their original holdings. This is a general picture of state repudiation.

The repudiation of these state debts is linked to the Federal Government by two arguments: first, that foreign holders of the repudiated bonds have no recourse, for our Federal Government will neither make the states pay these obligations nor allow any other nation to try to make them pay; and, secondly, some of these bonds were issued by legislatures set up under the supervision of the Federal Government and kept in power by the presence of Federal troops.

The facts would tend to show that a nation can accept a gift and still grow to quite respectable proportions afterward and that states can partially or wholly repudiate certain debts and still have comfortable credit and prosperous industry afterwards. Germany has repudiated her debt to foreigners as well as to her own nationals and her credit is nevertheless fair and her prospects improving. If France or Italy failed to pay all of their debt, they would still go on. It is not true as the Republican platform said:

> That nations cannot recognize or admit the principle of repudiation. To do so would undermine the integrity essential for international trade, commerce, or credit.

It is better that international debts be paid. Nations that can and do pay their debts in full naturally have advantages over those that cannot or will not. But, as the German case shows, it is possible to establish credit immediately after repudiation if lenders can see why the old loan could not be paid and why the new one can. If France can balance her budget and stabilize her currency she can probably arrange to pay her debt to the United States, but any study of French finances shows that these things are far from accomplished. The President's statement that the United States intends to be generous to its creditors and to aid Europe by insisting that every dollar owed us be paid in gold in this country is not really so hard as it sounds, even when his intention to keep the tariff up to shut out foreign trade is added to it. The Administration policy is to get the principal of the debts paid us and also some yearly interest, probably 3 and 3½ per cent., the maximum rate being the equivalent of the interest that the United States Government has to pay on the money it loaned France, and this is not high. Now if the payment of the principal is allowed to cover a sufficient number of years and the interest is kept low enough, a comparatively small yearly payment will get rid of the debt in time. And if this whole transaction is ushered in by a moratorium of several years during which nothing is to be paid, France might find some way of meeting her obligations, but in the present condition of her finances it is difficult to see how she can promise anything definite.

And confidence between Paris and Washington has broken down. The French evidently fear that we intend to drive a hard bargain and our government seems to suspect that the French want to pay less than they can. So for some time the two governments have jockeyed for position in the trade in a manner hardly fitting the dignity of either or hardly fitting their recent relationships.

Our relations with Italy seem better. The Italian Ambassador discussed Italy's debt with Mr. Mellon. If the accounts of the Italian terms are correct they hardly fall within the limits set by our Administration, for they include a reduction of the debt and tariff concessions as well as a moratorium, low interest, and a long period for payment. Nevertheless, the sooner the negotiations are begun the sooner the task will be done, and time is of importance in the matter. If the American Government could suggest a plan for France and Italy in their present state as profitable for the whole world as the Dawes plan for Germany when Germany was in a much worse state, it would be an act of great statesmanship.

Abolishing the "Fifty-Fifty" System

PRESIDENT COOLIDGE has twice questioned the wisdom of the "fifty-fifty" system by which the Federal Government gives aid to the various states. Governor Albert Ritchie of Maryland before the Governors' Conference at Poland Springs, Maine, directly advocated its abolition.

Six principal subjects come under the "fifty-fifty" system. These subjects, together with the Federal Aid extended for each during the fiscal year 1924, as shown by government reports, are as follows:

Coöperative agricultural extension work, Smith-Lever Act, May 8, 1914.	$ 5,880,000
Highway construction, Federal Aid for Roads Act, July 11, 1916 . .	63,375,000
Vocational education, Smith-Hughes Act, February 23, 1917	5,188,952
Industrial rehabilitation, Act of June 2, 1920.	581,265
Prevention and control of venereal diseases, Chamberlain-Kahn Act, July 9, 1918	93,627
Maternity and infant hygiene, Sheppard-Towner Act, November 23, 1921	847,536
	$75,966,380

The objections to the system are these:

1. The very name "Federal Aid" is a misnomer. It implies some sort of gift or gratuity from the Government, whereas the truth, of course, is that the money which the Government pays to the states under the name of Federal Aid it first collects from the people of the states through the levy of Federal taxes, because the Government has no revenues except what it raises by taxation.

2. The Government could supervise or control none of these things [agriculture, roads, education, health, etc.] directly, because in doing so it would be violating the plain limitations of the Constitution. But under the "fifty-fifty" system the Government gets this right by exacting it from the states as a condition of their receiving back any part of the moneys which their people were taxed to raise.

In other words, the Government gets indirectly and by bargain the right of supervision and control over local affairs which it could not supervise or control directly.

This is the insidious and vicious part of the system.

3. The system involves the creation of large bureaus in Washington to administer it, and builds up a bureaucratic Federal Government. This causes the inevitable consequences of incompetence and red tape in administration, and ever-mounting cost and extravagance.

4. The system tends to impair state initiative and incentive. Nothing could have a more deadening effect upon a state's endeavor and determination to solve and settle its own problems, than the cry "Let Washington do it."

5. The system tends to draw state funds which may be more needed for other local purposes. People are slow to realize that the Federal money is actually their own money which the Government taxed them to raise. They seem to think that somehow it is really a gift, and that by matching it with state funds they will be getting something for half price.

6. The amount of Federal Aid returned to a state bears no relation at all to that state's contributions to the Federal revenues. The basis of apportionment is generally rural, urban, or total population or mileage, or else there is a flat appropriation. The result is that the wealthier states carry the poorer states.

Yet the wealthier states must keep on doing this as long as the system continues. They must come in under the system and let their citizens pay and get back for themselves a little of what they pay, because if they do not, their citizens will pay anyhow, and the other states will get it all.

7. The Federal supervision and control tend to result in standardization in affairs

which ought to be settled by the home people of each state, in accordance with their home wants and needs.

8. Finally, the rapidity with which the system has grown is one of the most alarming things about it. It is still growing. It seems to grow by what it feeds on. The Sterling Bill for a Federal Department of Education, with an annual "fifty-fifty" appropriation of $100,000,000, is knocking at the door now for admission.

These are the arguments against the system. Governmentally, they seem to me not only sound but unanswerable.

"Victims of Abuses and Tyrannies Bearing Popular Labels"

AS WE contemplate a world of peoples enlarged out of the control of dynasties and denying ancient prerogatives, as we observe the widespread simulation of democratic forms among peoples still without self-discipline or training in the most difficult of arts—vast masses who are victims of abuses and tyrannies bearing popular labels—we can but realize that we have fallen upon a time when it is not necessary to argue the right of self-government, but to demonstrate the capacity for its exercise; not to invoke the name of liberty, but to learn the practice of liberty; not to oppose the outworn pretensions of despots asserting divine right, but to secure the good order of community life and rational progress under free institutions, so that peoples escaping the weariness and cynicism which are the natural reactions from the illusions of freedom will not invite despots to return."

This paragraph from a recent speech of Charles Evans Hughes is a striking picture of the world to-day. The Imperial Government of Germany was the last aggressive force of the old despotisms. It was beaten inside and out seven years ago. There is not its like anywhere in the world to-day. But of vast masses of people living under the simulated forms of democracy without training in that most difficult art, there are plenty of examples before our eyes.

Aristocracy is destroyed. It will not reappear where the people can create democracy in its place. But democracy, the highest form of government yet conceived by man, is the most difficult to create and its success demands a comparatively high degree of political experience.

Can China evolve a democracy or will it return to autocracy as the only antidote for chaos within its abilities?

Can Mexico, which has had the theory of democracy for more than a hundred years along with the practices of dictatorship—can Mexico change the simulation to the reality?

These two countries bring us face to face with this question. If a dictator appears in one or both—a man who seizes power and whose strength would enable him to maintain order and deal with foreign governments—should we recognize such a man even though his recognition spelled the end—at least temporarily—of the effort at democracy? How wedded are we to democracy in others? There have been times in our history when our dominant mood was to think that every people had a right to whatever kind of government they pleased to have. There have been other times when we believed that every people had a right to whatever kind of government they pleased to have so long as it was democratic. At all times we have rejoiced in any democratic success. Before us now is the difficult problem of finding a way to help some of our neighbors "so that peoples escaping the weariness and cynicisms which are the natural reactions from the illusions of freedom will not invite despots to return."

Prosecuting Only the "Big" Liquor Men

THE prohibition enforcement organization of the Treasury Department has had a "shake-up." It is now organized in duplicate with the twenty-four geographical divisions of the Department of Justice. The twenty-four regional offices will have administrative power. This decentrali-

zation would seem to tend toward greater effectiveness. The newspaper dispatches announcing it intimate that the main effort of the enforcement officers will be directed toward the sources of supply—illicit manufacture, the sale for beverage purposes of alcohol licensed for other uses, the rum fleet, and the border smugglers. The corollary of this is that retail bootleggers and small violators of the law will be generally left alone.

The reason for their practical immunity is that they are so numerous in certain parts of the country that it is impossible to catch even a fair proportion of them, and if caught there is no way of handling their cases. Punishing a man for selling a drink of beer is a police court function. Such cases ought to be handled by a magistrate. But the Federal Government has no police court organization. It has no magistrate's courts. The theory on which the Government was created particularly left such work to the counties and cities of the states. Being without proper machinery for doing a task which it was never intended to do, the Federal Government has to take all liquor cases into its district courts and try each offense by jury. The Federal Courts in many districts cannot possibly handle 10 per cent. of the cases that could be brought before them.

And as it is, the liquor cases have seriously interfered with the work which the United States courts were designed to do. As there is not the machinery for enforcing the law against every one, the Treasury and the Department of Justice are forced to select a certain variety of law-breakers to specialize upon. Undoubtedly, as they could select only a few law-breakers to prosecute, it was wise to select the larger ones, because there are fewer of them and their conviction might prove more deterrent than the conviction of the small fry.

In those districts in which there is a large sentiment against prohibition the Federal Government has had to adopt a policy of partial and selected enforcement in the hope that in time public sentiment will change enough to make the communities desire general enforcement and turn their own proper agencies to the work of enforcing the law.

If in the next report of the Secretary of the Treasury or in the President's message to Congress on the state of the nation the public were given a frank and full account of the state of prohibition enforcement from the Government's point of view it would certainly be of great interest to the public. The public knows that when the President and members of the Cabinet take an oath to administer or to enforce the laws of the United States it means enforcement within reasonable bounds. What degree of failure is reasonable without a frank report to the public is of course a matter of opinion. But there is ground for thinking that the degree of failure to enforce the prohibition law is beyond reasonable limits, in spite of the best efforts of the Administration.

Conspiracy to Defraud the Government

THE lease of the Teapot Dome oil fields to the Sinclair Company has been upheld by Judge Kennedy of the United States District Court sitting at Cheyenne, Wyoming. The Teapot Dome lease to the Sinclair interests was similar to the Elk Hills lease to the Doheny interests. In each case the government lawyers claimed that there had been a conspiracy to defraud the Government. In the case of the Elk Hills lease Judge McCormick held that there had been such a conspiracy and that therefore the lease was void. In the Teapot Dome case Judge Kennedy held just the opposite to be true. The criminal case against Sinclair, Fall, and Doheny was dismissed upon a technicality. The two conspiracy cases will be appealed and the criminal case is to be reinstituted.

Albert Fall as Secretary of the Interior engineered the Elk Hills lease with the Doheny company and then accepted $100,000 in cash from Doheny, either as a gift or as a loan, and lied about receiving it. The same man was responsible for the Teapot Dome lease to the Sinclair

company, and he afterward took service under that company to go to Russia. The Government endeavored to prove that Fall or his relatives received $100,000 worth of Liberty Bonds indirectly from the Sinclair interests. Judge Kennedy held that the government evidence did not prove this.

But, as regards appraising Fall's fitness for a Cabinet post, this makes no difference, for he did take Doheny's $100,000 and lie about it afterward. And what is more, although it was not known that Fall would commit such gross improprieties as he did, it was perfectly well known that he was not of the calibre required of a member of the Cabinet and probably no one knew it better than the President who appointed him and the Senate which confirmed him. The same was true of Daugherty. Doheny and Sinclair can continue in business without inconvenience whether they have nice discrimination of honor and propriety, but happily in public life without these things a man cannot long remain in high place. Whether Fall goes to jail or not his political career is ended.

Our Emergency Fleet Still With Us

LAST year the President appointed a committee of the Cabinet to recommend some policy for him to follow in regard to the Shipping Board and the Emergency Fleet Corporation. The committee reported last December, advocating three changes. The Shipping Board should be reduced to its original function —a semi-judicial, regulatory body for the merchant marine as a whole, both the private companies and the Emergency Fleet Corporation, a kind of Interstate Commerce Commission for ships. The ships, docks, and all physical property belonging to the Shipping Board should be transferred to the Emergency Fleet Corporation, which should be organized like a commercial shipping company and run its business as nearly like one as possible. Such work as economic investigation and promotion of American trade —work which duplicates functions of the Department of Commerce—should be turned over to that department.

It is generally believed that the President favors these changes and that he will recommend them to Congress. In the meantime he has asked the Emergency Fleet Corporation to let its president, Rear-Admiral Leigh C. Palmer, conduct the negotiations for the sale of ships, and this has been done.

The Hoover Committee's report urged the sale of government ships into private ownership as fast as possible. They will have to be sold at a great loss. That is but a frank recognition of the fact that they were built as a war measure and that the loss on them is as properly charged to the war as the cost of shells shot at the Germans.

The Hoover Committee also recommended that if private enterprise would not maintain regular services upon trade routes of national importance the Emergency Fleet Corporation should do so.

That recommendation brings up a very interesting question. If private enterprise refused to carry on service on certain important trade routes, presumably it would be because they could not make these routes pay. If the Emergency Fleet ran services on these routes, it would be at a loss which would have to be made good by the Federal Treasury.

Before the United States entered the war there was in this country very vigorous criticism of the Germans for backing their trade with government aid. It was contended that subsidized trade made unfair competition and that, moreover, it led to war, because where governments are engaged in trade rivalry directly it engenders ill feelings. There was likewise a certain amount of somewhat similar criticism of the British. A considerable part of American public opinion opposed the idea of any government becoming a partner in foreign trade. Since that time our foreign trade has grown very much. It has become a more important interest to us. It may be that, with the world organized as it is, it is necessary for our government to enter the field of foreign commerce. But before we commit

ourselves permanently to this course we ought at least to study the result which this policy has had on other nations and to find out why it is that what seemed so reprehensible in others in 1914 should seem so natural for us in 1925.

There can be little disagreement with the recommendations of the Hoover Commission for selling all the government ships that can be sold to private owners and for relegating the Shipping Board to its original function (or it might be abolished). Whether any gains that might accrue to the country from the maintenance of trade routes by government ships run at a loss would equal the distinct disadvantages of having the Government in business is doubtful.

Sugar's Effect on Politics and on the Nation

WHEN the last tariff bill was passed there was a great fear in certain quarters that the nations of Europe would dump into our markets cheap goods made on wages paid in depreciated currency. In consequence the rates were made very high and a provision was inserted in the bill that the President could raise or lower the rates 50 per cent. At that time the proponents of the bill defended its high rates by pointing to this elastic provision and saying that when the dumping danger ceased the President could lower the rates. At the time most of the emphasis was upon the ability to *lower*. In actual practice the emphasis has been upon the President's ability to *raise* the rates. No rates have been lowered. Several rates have been raised. And the President has decided to keep the high sugar rates in spite of the recommendation of the tariff board that they be lowered.

This is a special favor by the President to the beet-sugar growers. The President has talked a good deal about taking the Government out of business. The beet-sugar industry is a case in point. It is a business created by Federal enactment. The beet-sugar people claim vociferously that they cannot live unless they have a high tariff. They live upon a favorable law. Is it surprising that they have a peculiar interest in politics? That explains why, while there are no tomato Senators or strawberry Senators, there are beet-sugar Senators.

It is not surprising that where there is a business which needs a special governmental favor to keep it alive and where further favors may not only keep it alive but also enrich it at the public expense—it is not surprising that under these conditions the public generally should watch with some cynicism the public activity of the representatives of the beet-sugar districts, or any one connected with that industry. The public's feeling against Charles Beecher Warren, whom the President wished to take into his Cabinet, was based more upon the fact that he had been closely allied with a business which must have government favors than upon any specific acts of Mr. Warren's. Had his relations been with lumber manufacturers rather than with sugar manufacturers it is doubtful if any question would have arisen.

Now the President has decided that the beet-sugar industry needs to have its exceeding high protection continued. He continues its special aid—a particular kind of favor which is extended to it and certain other businesses. It is extremely doubtful if this improves the general prosperity of the nation. It is certain that it does not improve the level of politics. As long as there are businesses whose existence is based on legislative and Presidential favor, so long will there be special interests in politics; and the more businesses like this there are, the less will our government be concerned with the general welfare.

While the tendency was strong for the Federal Government to increase its sphere of action so that it controlled more and more not only the business but also the personal activities of its citizens, it was natural that people should be tolerant of the tariff favors, but now that public opinion is beginning to view unfavorably the paternalistic interferences of the Government it is inevitable that there

should arise again before the public mind the immorality of creating and maintaining the profits of specially favored businesses by law. Moreover, it is possible that surplus American money and the more efficient American manufactories which do not lean on artificial support may see it more to their advantage to lower the tariff.

Industrial Weakness and Poor Schools

AT THE recent session of the Tennessee legislature which passed the anti-evolution bill, the most important measure passed was one improving the condition of the schools. The law enacted was far from perfect, but it opens the way for the state to come to grips with its main problem—the teaching of its people.

In the past the South has been industrially a conquered country, not because the Confederacy was defeated but largely because education has not been more successful. In Mexico when any great enterprises are started the Mexicans do the manual work and occupy the lower positions in management, while foreigners put up the capital, direct the enterprise, and receive most of the profit. Not to the extent that this is true in Mexico, but still far more than it should be, this sort of thing is true in the South also. The reason has been a lack of trained brains. It may be argued that there was likewise a lack of capital. True, but brains can borrow capital and pay interest on it and keep the profits. But a country that does not furnish its own brains will pay both the interest and the profit to some one else. Industrially it will be a conquered province and no law or agitation can prevent it.

Now, of course, no state is or should be exclusively self-contained either as to brains or as to capital. It is a matter of degree and of give and take, but not only the educational interests but also the commercial bodies in Tennessee might well ponder in what degree Tennessee gives and in what degree it takes and pays high for taking. The Chattanooga *News* recently reprinted this paragraph from the report of the Masonic Educational Committee of Tennessee:

> The public school system of Tennessee was established in 1873. At the end of twenty years the system occupied the forty-first place among the states. In 1920 . . . we had drifted down to the forty-fourth place. . . . Tennessee, from an educational standpoint, can be likened to an arid and almost trackless desert, with here and there a struggling oasis.

The one great problem before the South is to provide itself with its own trained brains. With those, it can provide itself with all else. If this could be suddenly done it would be the greatest event in American history that any man can remember. It can't be done suddenly, but it is being done to the vast advantage of these United States, socially, economically, and—in the future—politically.

Where Heavier Taxation Is Needed

THERE are countless tables of figures to show the amazing growth of the "New South." These figures have much that is encouraging in them, but no one who knows the South and really believes in it is content with the South's relative status to other sections of the country. In many essentials it is still behind. The new South is new in the sense that it has its shoulder to the wheel of progress; it is not new in the sense that it has reached its goal.

The money expended for public education by southern states in the school year 1921-22 (the latest available figures) was as follows:

	EXPENDED FOR INSTRUCTION	POPULATION
Alabama	$8,667,686	2,402,273
Florida	4,626,710	1,024,054
Georgia	9,706,324	2,969,664
Kentucky	10,119,562	2,449,263
Louisiana	10,096,529	1,835,106
Mississippi	6,692,488	1,790,618
North Carolina	13,012,704	2,649,982
South Carolina	6,402,408	1,727,070
Tennessee	9,643,998	2,377,308
Virginia	11,281,087	2,372,940
	$90,249,496	21,598,278

The comparative figures for one eastern and three western states are shown below:

	EXPENDED FOR INSTRUCTION	POPULATION
New York	$123,221,168	10,712,680
California	49,001,043	3,697,070
Washington	16,376,155	1,441,890
Oregon	8,596,941	811,875
	$197,195,307	16,663,515

While New York and the western states pay about $12 per capita for instruction the southern states are paying less than $5. This means that trained brains from other parts of the Union will develop and exploit the South, for the South is not yet spending the money necessary to train its industrial leadership.

Unpreparedness in 1918

THERE was published in the July number of *Current History* a report of the meeting of Prime Minister Lloyd George and the members of his war cabinet with members of the war mission sent from the United States. The main part of the report is the speech of Lloyd George, in which he painted for his American hearers the desperate straits in which the Allies found themselves.

On man power he said:

> Take first of all the question of sending men over into the battle line as soon as you can possibly train them and equip them. . . . The collapse of Russia and of Italy has changed the situation. There is in addition to that the failure in the man power of France. . . . There will be considerably fewer number of [Allied] divisions next year [1918] than this year, and if you were to work out the sum it might work out something like this: That the Germans may be able to put 600,000 more men on to the French and Flanders front next year and we might have 600,000 fewer men. . . . That shows that it is a matter of the most urgent and immediate importance that you should send to Europe next year, and as early next year as possible, as many men as you can spare, to enable us to withstand any German attack, apart altogether from the possibility of inflicting any defeat upon them.

In answer to a question by Mr. Balfour, Mr. Bainbridge Colby replied that by January 15, 1918, there would have been conveyed to France one army corps (approximately 65,000 men), in addition to the United States troops (approximately 135,000 men) already in that country, but that this army corps would not be completely equipped and would not have all its transport animals. According to his estimate the tonnage available would enable the United States to maintain 220,000 men in France.

This picture of the case adds evidence to the belief that up to this time the United States Government had not planned to win the war, certainly not on the battlefield, and that its calculations for a peace without victory were dangerously close to allowing the Germans to win.

It had taken five months of constant urging to get the full complement of American destroyers into the fighting zone and these five months were part of the most desperate struggle against the submarine menace.

As the facts of the Great War slowly emerge from secrecy it becomes increasingly clear that, as it was right for us to go into the war, it would have been wiser had we gone into it sooner. Our government contemplated the horrors of war while the virtues of free government and democracy were nearly conquered by the German Imperial idea. There were those who did not raise their boys to be soldiers in the army of freedom but came much nearer than ever they knew to seeing them confronted with the goose-step.

The College Man's Greatest Asset

JOSIAH HARMAR PENNIMAN, President of the University of Pennsylvania, asked a number of prominent men what they thought was the main benefit of a college education. The majority spoke more highly of the lasting benefits of the contacts with their fellow-students and with the faculty, of college "life" as distinct from the acquisition of knowledge in their courses.

As the New York *Times* said:

> A reasonable explanation of this emphasis is to be found in Sir Henry Thornton's answer. He recognizes two kinds of value in a college education. First, the knowledge of certain subjects which are essential to getting on in one's profession technically, and, second, the knowledge of human nature acquired through competitions and other contacts with fellow-students and the advantage that comes with studious and orderly habits carried on into later years. But when the graduate has reached a position of importance in the world, as Sir Henry says, he will find that the first group of values diminishes and finally disappears almost entirely, and that he avails himself more and more of the values of the second group.
>
> This is an age of strain and steel, electricity, chemistry, and science, but—as always—the main element is man. Accordingly, as college gives the young man any just estimate of human relations it gives him a start in the most interesting, complicated, and useful science of them all. To some extent it gives him that.
>
> But it gives him another asset not greatly stressed in the answers to Dr. Penniman's inquiries. College gives the young man a wider picture of his possibilities than he would be likely to get elsewhere. He studies humanity in the terms of success, in the lives of great men. He lives in an atmosphere of great things. Instinctively he absorbs an ambition of success and service. It becomes a part of him and gives him vision to play the full part in life which his talents enable him to play. There are thousands of men scattered through this country whose value to the country is largely lost because in their youth they had no opportunity to see beyond their immediate surroundings and no chance to study success and no inspiration to set as high a standard for themselves as they could attain to. College can add little to a man's native ability, but it can enlarge his knowledge, vision, and ambition so that his ability may be turned into fields a hundred times greater than it might otherwise be.

"More Partners Needed"

UNDER this heading, the *Wall Street Journal*, in June, carried an editorial urging upon the railroads of this country the adoption of plans to encourage ownership of their stocks by the public in the territories which they serve:

> What is needed, more or less, in all the railroads of the United States is more partners and fewer creditors. The ratio of bonds to stock is lopsided. It works out for Class 1 railroads with something like 59 per cent. of bond obligation to 41 per cent. of partnership stock. If the proportions were exactly the other way, the effect upon railroad business, and above all the public attitude toward the railroads, would be revolutionary.

The *Wall Street Journal* sees no reason why the results which public utility companies have secured through the sale of their stocks to customers could not be obtained by the railroads by drawing the citizens of their various states into similar personal relations with them. "Is it too much to hope," it asks, "that the citizens of the State of Pennsylvania could become proud of the Pennsylvania Railroad? Much less worthy things are the object of civic pride."

To give a clear understanding of what has been accomplished by the customer-ownership campaigns of public utility companies, it is not out of place to quote from a recent article by Mr. Edward B. Lee, which appeared in the *Financial World:*

> There is no immediate financial benefit to the companies in disposing of their preferred stocks in this way, as the cost of carrying on the customer-ownership campaigns is as great as the amount of commissions paid to dealers for disposing of the stock. The great benefit comes to the companies in having as partners those with whom they do business. No other factor has ever come into the industry that has been so helpful in improving the relations between the companies and the consumers they serve and the government officials under the jurisdiction of whom they operate as the customer-ownership movement.
>
> And this customer-ownership movement has

been of just as vital importance to the public as to the companies, as the preferred stock sold to them has promoted thrift and afforded investors of large and small financial means opportunities for the investment of funds in reliable securities. There is no question that the savings of the public have been more greatly augmented through this movement than through any other factor that has entered the financial life of the country.

Young Man, Mix In!

MEN of power are men who get their lives mixed into the lives of others. Theodore Roosevelt got so many other people's welfare and concerns tangled up with his, that hardly a man in the country could make an important decision in his private business without pausing to take account of what Roosevelt's next move might do to his plans. Incredible numbers of people were indebted to him for kindnesses or acts of helpfulness. It was chiefly this inter-penetration of personalities between Roosevelt and the thousands whose lives he touched, that gave him his power in the community.

Look about in your own community and see who are the men of power there. Undoubtedly they are the men who have the most contacts with their fellows. The hermits may be interesting curiosities, but they carry no weight in community councils. The moral is, if you want to be a power in the world, "mix in." It can be done without violating the most delicate proprieties. Lord Balfour is a model of the gentleman, but he has projected his mind and spirit into the concerns of millions of people.

Not everybody can emulate these examples on the grand scale, but almost any young man who wants to count in the world can take a hand in village or city affairs, do the thankless but essential odd jobs of the neighborhood, and become so intimately a part of its life that he finally becomes well-nigh indispensable. To the young fellow just starting out, diffident of his powers and uncertain how to begin, the best advice is, "Mix in! Tackle the nearest job that nobody else wants, and you will find that it leads to influence and honor." As the hard-pressed but valiant Confederate general said, when the commander of reënforcements asked him where he should take his fresh troops into action, "Get in anywhere: there's lovely fighting all along the line."

The Passing of the Land Offices

ALL over the West, during the past spring and summer, the local newspapers have carried such items as the following:

WALLA WALLA, Wash., April 30.—(Special.)—The Walla Walla land office in continuous operation since 1871 went out of existence tonight when W. D. Gregory, register-receiver, closed his desk and walked out of the door. It was an office devoid of records when Gregory left as the books and records had been shipped to Spokane and Washington, D. C. Future land office business here will be handled from Spokane. All the older records went to Washington.

When the office was open it served all of Washington Territory lying east of the Cascade mountains. In 1876 the district was divided and the Colfax office opened. In 1881 the Yakima district was split off. Finally in 1922 business had dwindled so one man could handle the work and W. D. Gregory was given the joint job. Tonight he wrote finis to the work.

The era of free land in the United States is nearly gone. By Act of Congress, the President is required to consolidate Land Offices when their receipts fall below a certain sum, and many a familiar outpost of our westward development has disappeared in the last year under this legislation. Many of them, to be sure, had persisted long past their usefulness, simply to provide easy berths for decayed politicians. But their recent rapid mortality cannot but bring a sigh of regret to an older generation, to whom the vista of great open lands waiting for the plow was part of their sense of the special freedom of America.

The truth is, another West is passing. The old Wild West went long ago, with its unfenced, free range and its picturesque cowboys (picturesque in character as well

as in the costume, which still survives). But now the West that succeeded it is going too—the West of the homesteader, more lately come into the romantics of fiction through the works of Willa Cather and others. Free land has followed the free range into the limbo of far-off, forgotten things.

The West that is, is a land of fenced pastures and farms owned in fee simple subject to mortgage at 8 per cent. automobiles, and golf courses. (The cowboys of eastern Oregon recently sent a team to The Dalles to challenge the whole Northwest to mortal combat with the clubs—think on the social, moral, and economic evolution compacted in that fact!) A little of the old life is nursed along upon "dude ranches" and in the wild-game sanctuaries of the National Parks. The homesteader is embalmed in film and book. The present farmer is like his brethren in New Hampshire or Ohio.

Where will the migration-bitten younger sons go next? Will we become another Britain, exporting youth to other continents and the islands of the sea—to such, at least, of even these as have open spaces left? Whatever the answer, America is practically "full-up" so far as free land is concerned. The process hereafter will be to divide more minutely what land is already under cultivation, and slowly to bring into cultivation arid and swamp lands. It is a change in facts and in national psychology that is sure to have its effects upon our future history.

Evolutionary Scenery in California

THE anti-evolutionists should turn their guns upon the State of California, for there the very mountains trumpet to heaven the Darwinian heresy. As the explorer of Sierran solitudes descends easterly from Kaiser Pass in search of yet more elevated vistas, he swings around the flank of the mountain, above a tributary of the South Fork of the San Joaquin River, and stands awestruck upon a projecting spur of Kaiser Ridge. Across the mountain valley there rises before his eyes a chain of exalted peaks, "swimming in the purple haze," their steep granite sides vaulting abruptly to spire-like, snow-crowned summits. Few scenes in America are comparable to this in sweeping majesty of grandeur, for at least seven peaks are visible at one glance, none less than twelve thousand feet in height, and five of them above thirteen.

The contemplation of their majesty inspires meditation upon the Hand that wrought such miracles of size and beauty. Yet these peaks are profaned with the following names: Mt. Lamarck, Mt. Wallace, Mt. Darwin, Mt. Spencer, Mt. Haeckel, Mt. Fiske, and Mt. Huxley—pioneers, all, of the evolutionary theory! And, to cap the climax of prophetic irony, the early explorers of this region had the foresight to name the place from which the first and best view of them is obtained, Tennessee Point! Then, as if to add insult to injury, they named the stream below Evolution Creek, and the lake at its headwaters Evolution Lake.

Doubtless William Jennings Bryan will take comfort, however, in other features of the same region. From the crest of Mt. Darwin, looking southeastward, Death Valley lowers, desolate as the Dead Sea and blanketed with the *débris* of explosions from the nether depths. To the northeast, where wanders Darwin Creek, is a dismal region of volcanic ashes and extinct craters—none older than 5929 years and possibly five days, according to his orthodox chronology of the flight of time since the instantaneous and complete creation of the world. The coincidence in space of the Evolution Group of peaks and these vivid reminders of subterranean brimstone carries a suggestion of warning that needs not to be enlarged upon. California is *particeps criminis* to the dissemination of knowledge of the theory of evolution—local geography being a compulsory study in the schools of the state—and may as well prepare now to re-name its Alpine scenery to conform with the impending amendment to the Constitution of the United States, making such knowledge illegal throughout the nation.

New Page Letters

A Third Installment from the Files of President Wilson*

Edited by BURTON J. HENDRICK

I. THE AMBASSADOR AND THE PRESIDENT

A PARTICULARLY charming aspect of this early correspondence is the glimpse it gives of the warm personal relations existing between the President and his Ambassador. The extent to which the Administration was justifying Page's expectations and the pride that he felt in Wilson's growing reputation in England and Europe, added immeasurably to his daily satisfaction with life. On certain developments of the Mexican situation, indeed, the Ambassador could not agree, but in the President's great purpose—his ambition to create a constitutional system in Mexico and reorganize Mexican conditions on modern lines—Page once more saw the fulfillment of his own ideals.

But the thing that delighted him most was the exhibition in Washington of a fine intellect, trained in literature and the science of government, successfully applying itself to great practical tasks. The fact that Page afterward radically differed with his chief on matters of world-wide consequence, necessarily tempts one to linger over this period of their association when the two minds and wills were working in the utmost harmony.

In view of the events of the next four years, one letter written by Page, two months after his arrival in England, has a fairly momentous interest. At this time Wilson's Presidency was only four months old, yet his new conception of his office, the high principles that he had already introduced into Federal policy, the vigor with which he was attacking great and pressing domestic problems, and the firm hold which he had obtained on American respect, had powerfully impressed the Ambassador. That this new leadership promised much for democratic progress in the United States was clear, but Page believed that it could be profitably exercised in a much wider field.

Again and again the wish to "do something constructive" rose uppermost in Page's mind. The European scene, it is apparent, shocked and saddened him. The specter of militarism and irresponsible autocracy, hideous enough when viewed across three thousand miles of ocean, assumed an unimagined horror when contemplated at first hand. The time had come, Page believed, for some new kind of international leadership. "Was there ever greater need than there is now," he wrote in a famous memorandum already printed,[1] which he sent to many close friends in the United States, "of a first-class mind unselfishly working on world problems?" Only disinterested leadership of this kind could possibly dissipate the danger then overhanging civilization.

There was only one force, Page believed, that was powerful and conscientious enough to protect mankind from the menace preparing against it in Central Europe. This was the mighty power embodied in the Anglo-American peoples—the wealth, the intelligence, the ideals, the genuine and unselfish enthusiasm for democratic progress of the United States and Great Britain and the great British

[1] Vol. I, page 272.

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Dominions. But the energy and purpose represented in this combination could be exercised for useful ends only under leadership of the ablest kind. Where was the leader? The answer seemed obvious; in his contemplation of the problem, indeed, Page saw in Woodrow Wilson the one indispensable man for the great task. Wilson was more closely related in blood to the British Isles than were any of his predecessors. He regarded the British Constitution as perhaps the final achievement of man in the great act of self-government, and English literature he had always studied as the most eloquent expression of the human spirit. For militarism and force Wilson had an innate horror that had its roots not only in emotion but also in a carefully reasoned philosophy of government and society. In addition to the necessary moral and intellectual equipment, Wilson had that vibrant tongue and pen, that impressive personal appearance, and that compelling authority which, in Page's eyes, had set him aside for leadership in this new work. No American statesman had ever filled the White House who could so sympathetically recall to Englishmen their own finest type of public man.

Probably Page's imagination shot ahead of the international sentiment of his own time, yet the fact must be recorded that it was his plan, as early as 1913, a year before the war, to use President Wilson for the purpose of preventing the calamity that, after four years of ruin, he was afterward called upon to compose. Only the association of the English-speaking peoples, under the leadership of President Wilson, could save the world from the gathering storm. A visible demonstration that the United States and Great Britain were working, not in any definite alliance, but with common ends, was the one thing that would make Europe pause. A visit of the President and his wife to England would, in itself, Page believed, have prevented a European war. He well knew that Europeans attach an importance to friendly interchanges of this kind which Americans scarcely understand, and an official visit, set off with all the grace of Wilson's oratory, would in itself produce an impression on Europe that might have the most far-reaching consequences.

To the President

The Coburg Hotel,
Grosvenor Square,
London, W.
July 9, 1913.

MY DEAR MR. PRESIDENT:

I am writing you this little note about a subject that is none of your business nor mine and is, therefore, the more fascinating as well as the more important: I pray you if you have any influence in that quarter, you will persuade your daughter and her fiancé when they are married to accept the invitation that Mrs. Page took great pleasure in sending a little while ago to make us a visit. We can, I hope, really contribute to their pleasure and give them an interesting experience. It will be out of the London "season"; there will be no court functions, but there'll be plenty of other things; and we can make as much or as little fuss about them as they wish. You and I may not confess it, but just a little well-regulated fuss gives lots of fun—to the young. We all come here and see the outside of London. The inside few of us see; and, I assure you, the inside is well worth getting some glimpses of. They are a noble race yet, these dukes and earls and knights, and you forget their gauds on close view. There is now a Lady Phillip Sidney and a Lady Somebody-else who are sprung in direct line from John Hampden. I know them both and the sons of both are as fine young fellows as this adventurous planet holds. These folk and their like, few of whom ever visit our shores, are very simple and genuine and hospitable; and it is a most interesting experience to know them. This experience and such like I should like to give to your fine, genuine young couple as they start forth. And we'd at the same time give these good folk here a most pleasant experience. I bespeak your good offices then towards this international opportunity.

And this, quite sufficient for its own sake, is also a prelude to a more swelling song. Later, when the first big tasks are done, you and Mrs. Wilson must come here—I mean during your Presidency. Then you'll smash a precedent to some purpose. I've thought very much about American-English relations. We don't want any alliances: that would bind *us* to them in their troubles; and under our system we can't even make a treaty: no great matter. But we do wish to keep very close—as close as can be without any artificial force at work and without entangling alliances. The one tie will be made—the one possible and effective bond—by a friendly visit of the President and his wife.* Ask House. I mentioned it to him one day and his imagination turned red.

For the present, however, the young couple. Further our plan in their favour.

With all good wishes for your health and continued mastery,

Yours affectionately,

WALTER H. PAGE.[2]

*It might prevent an Anglo-German war and possibly an American-Japanese war also. The world would take notice to whom it belongs.—W. H. P.'s note.

President Wilson's reply to this letter, printed in an earlier volume,[3] expressed a desire to fall in with the suggestion, and an agreement with Page's point of view, but a belief that the plan was impracticable. There was too much work to be done at home, and the "case" against the President's leaving the country was "overwhelming." Page never missed an opportunity, however, of making President Wilson a familiar figure in England. The President's character and purposes were his favorite topics of conversation. He devoted many speeches to setting forth the new Presidential aims.

When the Authors' Club invited him to be its guest on December 3, 1913, he took as his subject, "President Wilson as a Man of Letters." The address and the Christmas letter sent the President two weeks afterward, again portray the fine spirit of friendship and understanding prevailing between the two men.

"I am most thankful to say that Mr. Wilson happens to be one of my oldest and best friends, and I cannot divest myself of his friendship," said Page on this occasion. "Of all the forces which bind together your country and mine there is no other one comparable to literature. The friendship of governments is well, very well, but it is little; the friendship of peoples is very much more important and stable, and the friendship of peoples could have no firmer foundation than in a common literature.

"With the hope of interesting you for a few moments, I may tell you something of the intellectual qualities of the man, and how they have found expression in his literary activities. I first had the pleasure of making Mr. Wilson's acquaintance just thirty-two years ago this week. We were both somewhat younger than we are now, and he had finished his college career and had gone to Atlanta to practice law. He was a well-trained lawyer. I met him there and he seemed to have quite an abundance of time to read. At that time a series of books were coming out on various aspects of the English Government—if I am not mistaken, by a gentleman who in those days was called Mr. John Morley. Mr. Wilson was profoundly interested in them, so much so that I saw at once, on very early acquaintance, that the very first love of his mind was the love of the study of government. There he was, a young man of twenty-seven or twenty-eight, with his living to earn, caring very much more about whether he thoroughly understood the theory of the British Constitution than he did about any client whatsoever. He soon discovered—admirable as his legal training had been, and he had what I regard as a great legal mind—that his passion for the study of government was

[2]This letter is printed from a copy found in Page's papers. The original does not appear in the President's file. Since Page, in a letter to Col. House, dated August 25, 1913, tells of having written to the President on these subjects and since Page's papers contain President Wilson's reply, there seems no doubt that it was sent.

[3]Volume I, page 276.

stronger than his passion for the service of clients.

"He went to the Johns Hopkins University, and set himself to the study of history and government. After two years there he presented his thesis for his doctor's degree, a book which he called 'Congressional Government,' in which he showed that the real rulers of the United States were not Congress, but that it was the committees of the two Houses which really ruled the American people. Everybody knew it as soon as it was said, but nobody had said it for many years before. He elucidated that in a little book which has become one of the classics of our government, and that was his thesis for his doctor's degree.

"Having received that, he wished still further to pursue his studies of government, and became a teacher. After two or three years at smaller colleges he was called to the Professorship of Jurisprudence at his own University of Princeton. There he became a great teacher of government as well. Up to this time I dare say few of his friends had ever thought of his being a man of action, except his most intimate friends, because he always showed them that quality of his mind which meant leadership. As a teacher he was a notable leader and an admirable lecturer.

"Here was a man, therefore, who up to this period of his life might be said to have three careers from which he might choose. He might be a lawyer, he might be a great expounder, he might be a man of action. Having those three careers to choose from, he chose all three.

"One member of his Cabinet said to me after he had sat at the Cabinet table for three months, 'There has never come a question before the Cabinet but what the President instantly had an opinion about it, and he expressed it as a man would express an opinion he had thought out several years before.' That is just what he has done.

"Here is a man who pleases his mind and cultivates it by reading Wordsworth and by an equally intelligent study of Burke. In one of his essays he laid down that a man of literature must first of all have something to say, and then, that he cannot hope to say it in a way that will attract and convince men unless he become a great artist in the use of speech. And he has put himself through terrible trials for thirty years to master the great art of expository speech.

"He never lost sight of the fact that a man who uses our language, and has ideas that he wishes to impress upon people, must express them with the deftest artistry that he can, and he has been a hard student of the art of expression. He has a thoroughly trained legal mind which now stands him in good stead. He has a well-furnished mind in economics and in the history of government, and his state papers are written with the same literary care that the best of you ever give to the best of your sonnets.

"I know of no other ruler in the world who is his superior in respect of the literary style of his state papers. That is the literature he is now making. Not since Lincoln has there appeared a man in American life whose 'stump' speeches put in book form have had the wide reading that Mr. Wilson's have had. Here is a man who believes with all the earnestness and inevitableness that a man ever believed anything, the simple creed of a democracy, and he does not flinch from carrying it out to its farthest consequences. He believes that a man can believe only one thing in his life, and the literature that he has produced and is producing is the exposition of that profound belief. He has an essentially moral belief also, and his mind is essentially a moral mind, as recent events have given the best possible evidence.

"With all this he has what I call the true humility of a great mind. If I do not speak in praise of Mr. Wilson I fear I shall have to cease to speak, for it is by reason of his command that I owe the honor of dwelling among you. I owe him, also, the intellectual stimulus and companionship of more than thirty years, and there are many men in the United States who feel proud to pay him that tribute. If you will kindly remember that

I have not spoken anything about the President of the United States, that I have spoken only of Woodrow Wilson, and that I have no official relation to the United States or anything, except to the Authors' Club, I will thank you."

To the President

American Embassy, London,
21 December, 1913.

DEAR MR. PRESIDENT:

First and foremost your young folk[4], who have gone off with Dr. Grenfell for a week—they have given us and many others here great joy. I dare say they have written you about some of their experiences; but they couldn't write, for they don't know, how much pleasure they have given us. In one sense they have come in a dull time, but for that reason we have ourselves seen more of them; and, even when most of the great people are gone, there's a good deal of London left. All our friends have been greatly charmed by them. When they first came, I congratulated Frank; when they had been here a week, I congratulated Jessie; when they went away the other day I congratulated them both.

And now comes the news of the Senate's passing the currency bill[5]—an unmatched record in one year's legislation and leadership. You've now got to high table-land—these two peaks[6] surmounted; and I hope all the governmental and party prospect is pleasing. You may be sure of this—here your hand is felt. When I first came here I encountered a good deal of curiosity about the personality and the qualities of the new President. Now I encounter the profoundest respect and constant congratulations. It's fairly amazing how quickly and accurately in this insular world of great ignorance about the United States they "measure up" our real men. Sir Edward Grey and the Prime Minister have both this week said things to me about you that sound almost as if they knew something about our government and the spirit of our institutions and people. They are in a good temper and in a good mood, and Tyrrell[7] has come back in good time to help that. He tells me much about you and House and Houston[8]. "I'll tell you what I like about them," said he: "they don't gush." Then he went on to say how you talked in the same phrases as their Liberal leaders here. "They talked to me just as they talk to one another." It was a good stroke—his going. When House comes over again, that, too, will be a good stroke. If only you should see your way to come, as perhaps you may yet.

The peace plan which has been carried out in treaties with several small Central American states will, I fear, if presented here, provoke the answer that a renewal of the Arbitration Treaty should come first. That is more definite, concrete, helpful. But, as I say, they are in a mood here to be quite patient. I am surprised, as I think it all over, at the number of reversals of positions they have made—in the Mexican business, in the concessions business—in everything we have asked.

That San Franciscan Fair decision is the only exception. That stands. There will, of course, be individual British exhibits—how large and how important I cannot tell. But, underneath all, the feeling of a large part of the public is that expositions have had their day. The very vigorous British agitation in behalf of the San Francisco Fair has its motive in a wish to please us. "The United States," they say, "wishes us to go and that is a sufficient reason why we should go." As nearly as I can guess, the chance that the Government will be forced by Parliament to participate is small.

As Christmas comes, I am glad to say that my diplomatic docket is entirely cleared up—the slate's clean.

[4] Mr. and Mrs. Francis Bowe Sayre, son-in-law and daughter of the President, then on their honeymoon in England.

[5] This is the Federal Reserve Act.

[6] The other "peak," of course, was the Underwood Tariff Act.

[7] Private Secretary to Sir Edward Grey. His trip to the United States is described in Vol. I, Chapter VI.

[8] Secretary of Agriculture in the Wilson Cabinet.

The one thing that my mind works toward all the time is the hope of finding a chance to do something constructive, something that will stand out and last and be important in the relations of the two peoples. These relations are surely most satisfactory; but there is an immense amount of ignorance of the other on each side.

My life continues to be interesting and very busy and in every way pleasant. Its usefulness I sometimes doubt, because of the lack of definite constructive work. (Bryce reassures me and says that I am mistaken.) Then the vast silence across the ocean and the rhetorical indefiniteness at the other end of the line give a feeling at times of a vast vagueness. Your letters, you may be sure, are always reassuring and most helpful. They are the only definite things I get. I am told, too, that this is always so—perhaps it must be so. But that will be remedied presently, I know. For how big in more essential things are the great tasks you have done since March—the Tariff Act, the Currency Act, the Principle of Saving Helpfulness touching Latin America, the preservation of the integrity of the Consular Service and of the rank and file of the Diplomatic Service (this has had a very good effect in every European capital), and the welding of the old hungry and growling party into an intelligent and loyal instrument of government. These achievements are so great and so fundamental that, in comparison, it would matter little if we had no diplomatic service. You will, therefore, never catch me complaining of any little sorrows of my own: if I had them, they would not be worth airing; and I am most happy to serve.

During the last month I have made almost a speech a day—most of them after-dinner speeches before such bodies as the Royal Society, the Economic Section of the University of London, the Authors' Club, the Worshipful Company of Mercers, the Navy League, and the like; and I have tried to present one idea in each little speech that should give the company one clear-cut notion of some part of the work of our great democracy. They receive my commonplaces most heartily. I had the satisfaction of receiving the appreciative thanks of a group of judges of the higher courts, including the Lord Chief Justice, on an explanation of our Mexican policy. They had not before understood it at all. It requires a surgical operation to get so simple a principle into the British head. All this activity, I dare hope, helps—a little. But it's very slow, and—it's work as hard as it is pleasant. But all real life is an adventure and this is adventurous enough you may be sure. I've worn two dress coats to a frazzle, the Lord knows how many pairs of motor tires, and I've been stopped for speeding. But I'm too old a fox to eat their dinners or to drink their wines. Still, if the King lives as long as I've toasted and sung him in my hopes of long life to him, he'll be immortal. He must have got some inkling of it, for he sent me two brace of pheasants the other day.

Now all this is a rambling and, I fear, a dull letter—meant only to do this: to convey my hearty congratulations and good wishes for some rest for yourself and for a Big New Year and many of them.

Always faithfully,
WALTER H. PAGE.

P. S. Here's a rather good piece of news—the English and the Germans, who own most of the ships, had been so running the Safety at Sea Conference that it became obvious that their report would be merely a clean bill of health for all ships afloat. Several days ago Mr. Alexander[9] ran across the Prime Minister—at a luncheon, I think. Mr. Asquith asked him how the conference was going. Alexander told him that it seemed doubtful whether the report would be such that the American delegates would sign it. The Prime Minister evidently passed a word of caution and command along; for the very next day things began to go differently. I heard that the Prime Minister said that

[9]Joshua W. Alexander, Member of Congress, and Chairman of the American Commission to the Safety at Sea Conference.

the report *must* be one that the Americans would sign.—I ran across old Lord Mersey at dinner about that time. He presides over the Conference, and he's a sleek, fine old Law Lord who says startling things as gently as a sucking dove. He said to me, slyly smiling: "Your Excellency, I have an observation to make to you about your countrymen: they fight well —your Honorable Mr. Alexander, for instance."

"Thank you," said I.

You'll be pleased to hear, too, what the Lord Chancellor[10] said to me about your daughter. He asked that pair and my daughter to dinner and his only other guest was Lord Morley. Those old fellows had a gay time with those young folk. The old Lord Chancellor (who looks like a bigger Hoke Smith, and, I sometimes fear, *is* more or less like him) said to me afterwards: "A fine young lady: I like the breed."

W. H. P.

II. A CRITICAL PERIOD IN THE SPRING OF 1914

THERE was one aspect of the Mexican disturbance of 1914 that caused considerably more excitement in England than in the United States. The American interest lay chiefly in the political phases of the Huerta revolution and in President Wilson's attempt to create something resembling a constitutional order in the great Indian republic. Unfortunately the President's "idealism" made little impression on Englishmen, who, when they thought of Central America, thought almost exclusively of trade.

In the latter part of February, 1914, however, Mexico wounded the pride of Great Britain in its most sensitive spot. The newspapers printed despatches describing the murder of William S. Benton in the presence of Francisco Villa. Benton was an Englishman who, though he had lived in Mexico many years, had followed the usual British custom of retaining his British citizenship. Francisco Villa was the military leader of the Carranza revolutionists—the faction which the American Government was almost openly supporting against the Huerta *régime*. Villa and his associates first denied the crime, then misrepresented the circumstances, and persistently evaded all attempts at investigation. That Benton had been murdered, that his murderers were Villa and his party, that he was a British subject entitled to the protection of the British Government, and that the United States was responsible for the Villa *régime* to the extent that it had encouraged the constitutionalists and made possible the munitioning of their army—amid a mass of contradictions and misstatements these facts were true and in themselves they presented a grave situation.

Ever since the days of Lord Palmerston, Englishmen have proclaimed as one of the cardinal principles of British policy that the protection of the British Government follows a British subject to the four quarters of the earth.

For the first time the British Government felt itself helpless in face of a situation of this kind. The fact that the murder had been committed by the faction that was more or less under the protection of the American Government was especially embarrassing. Ordinarily, the British Navy moves quickly to avenge insults of this kind, but the United States, under its interpretation of the Monroe Doctrine, does not tolerate punitive expeditions by European governments on American soil. Moreover, a blockade of Mexican ports would merely have injured the Huerta government, which Great Britain had recognized, and to that extent have benefited the Villa and Carranza revolutionists, whose authority extended only over a part of northern Mexico.

[10]Viscount Haldane.

The only power that could act decisively was the United States. But the State Department, under Mr. Bryan, was moving in the most deliberate fashion. Meanwhile, the British press was demanding the punishment and the Opposition was prodding the Government in the House of Commons. Sir Edward Grey, in response to these questions, showed his usual self-restraint, but it was a restraint that revealed, rather than concealed, the seriousness of the situation. The old Palmerstonian cry of "*Civis Romanus sum*" was once more heard throughout the land, but now, in view of the exceeding complexity of Mexican affairs, not to much purpose.

To the President

London
Embassy of the United
States of America.
Tuesday, February 24, 1914.

DEAR MR. PRESIDENT:

I have to-day telegraphed the State Department how strong and widely spread the feeling is here that the policy of "watching and waiting" in Mexico has gone on long enough. The excitement about Benton is general and intense. I hear it and read it on every side. What I telegraphed about the German Ambassador's remarks—well, I take his attitude only as symptomatic of the German spirit of militarism. He's screwed up courage enough to express himself to me, encouraged by the criticism he now hears here of our course towards Mexico. This German prince Artemus Ward would have called an "amoosin cus," a pretty fair specimen of the German courtier. Of course his remedy for everything is the sword, and I'm told he'd like to see England and the United States have a row.[11]

Not so Sir Edward Grey. In my long talk with him yesterday, he showed appreciation of our difficulties and sympathy. You will notice his clearness and restraint in his answer in the House of Commons, which I enclose. But he is much worried. He told me that the British public never became so much excited as when a subject had been killed in a foreign land. He confessed to some fear of harsh criticism of the United States in the House of Commons. But he is our mainstay—a moderate, patient, wise man, the biggest Englishman I have met. I am to dine with him to-morrow night, and, if I hear anything worth writing, you shall hear it. These friendly intimate meetings sometimes yield more than even the best official interviews.

I don't foresee just what we may be able with dignity to do in this case of Benton. But the more we can do, the more patient English opinion will be. It is just the kind of an incident that excites the Briton most.

Sir Edward's pleasure at the renewal of the Arbitration treaty was very great. "Things are clearing up," he said. On that, my own hearty congratulations.

The public comment on it here has been far less than it would have been if the Benton incident had not come at the same time. That has for the moment taken attention from every other foreign event.

Very heartily yours,
WALTER H. PAGE.

To the President

Embassy of the
United States of America.
London, February 28, 1914.

DEAR MR. PRESIDENT:

I have during the week telegraphed reports of the prodigious excitement here about Benton's death and of the calmness under severe criticism of Sir Edward Grey and the Government. Kill an Englishman at home and there is no undue excitement. But kill one abroad, and gunboats and armies and reparation are at once thought about—a state of mind that English rule in India and in other far-off foreign lands has made necessary till it has become instinctive. Of course, too, the financial impatience about Mexican investments has taken advantage of the

[11] This is an early judgment of Prince Lichnowsky—afterward Page had reason to think much more admiringly of him.

incident. It need not disturb us, I think, although it will cause quite a strong critical feeling against us for some time to come. There is no doubt about that.

I took occasion in my talk with Sir Edward Grey to-day to say very frankly that, while the event was in every way regrettable, the death of a man who, having long lived in a country and married there and amassed property and apparently taken sides in politics and who had yet not become a citizen of that country and who had so little judgment as deliberately to go and quarrel with a man who had military power—I told him that such a man's death was not an event that should in any way be thought of sufficient importance to cause a change in a well-thought-out righteous principle upon which a great government was directing its actions towards Mexico and towards all Central America. I thought it opportune, while I could thank him for his own considerate attitude, to tell him plainly that the incident is exaggerated in the British mind. He showed (rather than said) that he agreed with me, as I am sure he does. But he must answer to an excited House of Commons. He'll stand square and firm, however, in his relation to us. I feel sure of that.

I had to reason all this out myself and reach the conclusion that *we* ought to become excited and therefore that we would not become excited; for I have had no word from our government about the Benton incident. Two hours after my talk with Sir Edward Grey, the afternoon papers brought me news of the Cabinet decision yesterday. If I had known *that* while I was with him, I dare say I could have spoken with more vim. This is a fair instance of the way in which I sometimes have to think out what our government ought to do and to proceed upon *that*, as if I knew. This method has worked all right so far, but there are obvious dangers in it. If there were some man whose especial business it was to telegraph me about that Cabinet meeting, it would have been a great help.

When the *Times* published its ferocious leader the other morning (such things have a real influence here as nothing similar has with us) I immediately invited the editor[12] of the *Westminster Gazette*, which is the Government organ, to dinner. During dinner his wife told me they were all much distressed about the *Times;* and, after dinner, Spender himself said the same thing. He is to spend the afternoon with me to-morrow—of his own seeking—after my giving him this friendly chance. He is in the Government's confidence to an unusual degree. I sought to give the Prime Minister the same chance to talk. But, after he had accepted my invitation, the King commanded him to dine with him on the same evening. Bryce was here and said not a word! Neither did the King during the two hours that I explained baseball to him at the game between the "White Sox" and the "Giants." Most of the men who lately talked freely about Mexico are become silent. The *Spectator* to-day declares that our policy has lamentably and pitifully failed.

All which, to my mind, shows how lucky it is for us and for the world that it is *our* job and not theirs. They would India-ize and Egypt-ize Mexico forever.

I have confidence in Sir Edward Grey and the Government; but I can talk to them better if I am kept informed.

Yours very heartily,
WALTER H. PAGE.

To the President

American Embassy, London.
March 6, 1914.

DEAR MR. PRESIDENT:

The enclosed editorial from the *Pall Mall Gazette* is the best statement that I have seen of the way men who count for something here feel about the Benton case.

The exact influence and importance of the King in this government I could not explain in less than three hours—if I could at all. But it is very much more important than most men think—certainly more than I thought a year ago. His real power grows out of his personality. Well, the King sent me word a few days ago that he

[12] J. A. Spender, since author of "The Life of Campbell-Bannerman."

now understands "your President" and sees what a high-minded and sagacious ruler he is. (Better not tell this to the Irish!)

Yours most heartily,
WALTER H. PAGE.

The Benton episode, like most other matters outside the European scene, was swallowed up in the monstrous confusion precipitated by the German invasion of Belgium. After August 4, 1914, it became, in fact, an exclusively American problem. In an earlier part of this work, the Mexican story, so far as Page was concerned with it, has been told with sufficient detail. His letters to President Wilson, however, bring out new points. The critics of President Wilson's Mexican policy overlook one point in its favor.

Page believed that Wilson's opposition to the Huerta *régime* in Mexico, though it did not destroy the revolutionary spirit in that country and usher in a constitutional democratic order, did save not only Mexico, but also a considerable part of Central and South America, from the exploitation of commercialists whose chief interest was oil. It came out in the progress of events that Lord Cowdray's company had acquired important concessions, not only in Mexico, but also in Colombia and Ecuador. One result of American dissatisfaction at this kind of penetration was that Lord Cowdray relinquished these concessions at the demand of the British Government.

In a letter dated March 19, 1914, Page discussed this incident. "I believe," he wrote, "that if Taft (let us say) had had another four years, Cowdray would have owned Mexico, Ecuador, and Colombia, or so much of them as he cared for, with such a grip on their governments as would have amounted to a mortgage. He could have controlled them at any time and in any essential way he chose. The more I hear and see and learn, the surer I become that these countries owe their freedom from this dictatorship to you—for which release you will never get the credit or the thanks you deserve. Yet, I believe too, that they are not going to give us any more trouble, certainly not as long as you are in power or any other man who may take your policy. They are doubly afraid—first of the United States, then of their own government in its relations to the United States. No British government is going to risk our friendship for commercial adventurers. I even believe that Cowdray is thoroughly convinced of the righteousness as well as of the power of the United States and of its earnestness. . . . An excellent lady of title and character asked me to luncheon at her home—far out in Chelsea. I went. Cowdray and Tyrrell were present. We talked freely. I think I saw their minds —Cowdray with subdued financial ambitions, reconciled (or scared into it) with his situation. He isn't vindictive. He will not fight for revenge. I think, in fact, he forgives his enemies. He is essentially good natured, even amiable.

"Of course you had a hand in their halting, for which you need not lose sleep o' nights. And the main fact is, I think they will give us little or no trouble. And the British Government will not risk displeasing us for them."

To the President

8 May, 1914, London.

DEAR MR. PRESIDENT:

The news that reaches London through every channel that I hear of—governmental, financial, and newspaper—indicates not only the early downfall of Huerta but the gravest fears for the lives and property of foreigners in Mexico City especially, but throughout the whole country as well. I cannot guess to what extent these fears may be the result of opinion that has prevailed here till now—that Huerta could never be dislodged by the "rebels"; and, of course, I have no data to form any opinion of my own.

But I report this universal fear of anarchy and murder and plunder because of its bearings on governmental relations. Sir Edward Grey is thoroughly alarmed. His advices are that such a state of things may follow as will endanger foreign lives and property everywhere in Mexico; and

they (members of Parliament and others) are already asking this government what assurances it has from us or what preparations is it making, in common prudence, on the eve of the approaching catastrophe? And nobody here—from Sir Edward down—looks on Villa and Zapata except as scourges—thoroughly unprincipled—brigands and murderers. Carranza they know next to nothing about. But with Villa or Zapata as a conqueror, they will consider rank anarchy come. Are we in a position then to protect foreign lives and property? Will we take this active task in hand? I am asked this on all sides.

This I send for whatever it may be worth—nothing, or little, or much.

Yours sincerely,
WALTER H. PAGE.

P. S. The newspapers and certain question-asking members of Parliament keep saying that we have laid so much emphasis on the elimination of Huerta that we seem to have forgotten the larger problem of order and security in Mexico. This is as persistent as it is irritating.

P.

To the President

American Embassy
London
May 19, 1914.

(*Personal*)

DEAR MR. PRESIDENT:

The impending catastrophe in the City of Mexico casts its shadow here. Hardly a day passes but I am questioned and argued with and waited on, as, for instance, two days ago by a big banker and director in the Tehuantepec Railway. "I cannot meet the interest on my debentures," said he, "because your government has stopped traffic at one end. My shareholders are more or less dependent on their incomes from this source. What redress can I have? What can I tell them?" &c., &c., &c. Then, after a pause, "If your government had recognized Huerta—as every other government did," &c.

Then I got my inning, after he had done—a courteous but much wrought-up old gentleman.

"Every other government?" I asked. "You mean of course European governments who have no responsibilities there. Argentina, Brazil, Chile have not recognized him; and recognizing a military dictator merely puts a premium on revolution."

He had not thought of that. "What can I tell my shareholders and clients?"

"Tell them, if I may make a suggestion, that Mexico is a country where disorder has reigned for about 175 years out of 200, and that you failed to acquaint yourself with the history of the country in which you asked them to invest, and that, thanks to the United States, there is a chance that orderly government of a permanent sort may be set up as soon as possible and revolutions will be discouraged."

So it goes almost daily.

The idea is firmly rooted in the British mind that Huerta would have "kept order"—that's their whole thought—order—if we had recognized him, and that we mean to put up Villa. Carden, I think, now sees things differently, but Carden is dull, and I fear he is scaring this government by his dire apprehensions of what will happen in Mexico City when the Huerta *régime* ends—anarchy, murder, and worse. The Lord knows, I don't know what will happen; but I shouldn't take Carden's word for it. On the day he left London, he proved to me how impossible it was that the "rebels" should ever whip Huerta.

My hearty sympathy, my dear Mr. President, in this horrible state of things, with the noise of jingoes and men who are honestly afraid, with the element of uncertainty in the Mexican character, with the possibility of some awful havoc of error that may precipitate war—how admirably your patience shines as a clear light in a dark world! I am afraid to pick up a paper or to hear the telephone ring. But I am of the opinion that your friend Tedcastle expressed to me the other day—"I don't know just how it will turn out,

but I have more confidence in the President than in all the rest combined." One of the English generals said to me yesterday: "Let me give you a good piece of military advice. Don't go to Mexico. Let 'em howl. Be patient. It will cost a lot of money and many lives, and you'll get no glory—you'll get nothing for this loss. I hope your President will not listen to warlike politicians. They cause us to shed *our* blood, not theirs."

I have felt a sort of guilt in finding that I must send my recent reports of general criticism here—that we are blameworthy first for not recognizing Huerta and secondly for hesitating so long about invasion. But, of course, it is my duty to report that feeling, and you must know the danger that this general feeling may *possibly* prevail in this Cabinet, if some disaster happen, in spite of Sir Edward Grey's admirable attitude. The British War Office lately sent for Colonel Squier, our Military Attaché, and asked him what he regarded as the smallest force that might make a march (if the railway were blown up) from Vera Cruz to the City of Mexico—just why, neither Squier nor I know.

The Anglo-American exposition was opened the other day and among the speeches at the big luncheon was one by Lord Weardale who spoke of "The Wise Patience of the President of the United States." The Duke of Teck[13] turned to me and said, "He *is* a most patient ruler, and I sometimes hear his patience criticized. I am glad Weardale said that." All the newspapers here lack confidence in the Board of Mediation and many of them laugh at it. They lack any sort of confidence in any Mexican promise or agreement. Yet the criticism is not very active. We shall overcome it if only some dramatic disaster do not disturb the orderly process of events.

Yours very heartily,
WALTER H. PAGE.

The new cloud rising in Europe is evident from the variety of topics covered in the next letter. Colonel House is now in Europe on his famous expedition to establish some kind of working agreement with the United States, Germany, and Great Britain that would make impossible the European war.[14] He has had his rather discouraging interview at Potsdam with the Kaiser, and is now in London discussing the same subject with Sir Edward Grey, Mr. Asquith, and the government leaders. The United States has recently sold the obsolete battleships *Mississippi* and *Idaho* to Greece, and thus fortified that power against a threatened naval attack by Turkey. The Mexican situation has been surrendered to the Ambassadors from Argentina, Brazil, and Chile, who, in their meetings at Niagara Falls, have had little more success than American and British diplomats in finding a way out of the wilderness. Meanwhile the class struggle in Great Britain is raging in all unconsciousness of the vastly greater struggle hanging over Europe. Yet that the Government itself is disturbed at the European situation is now apparent. The Archduke Francis Ferdinand and his wife, the Duchess of Hohenberg, had been assassinated on June 28th, seven days before this letter was written. There are intimations of the new European danger in Page's survey, yet its general tone and topics indicate that the consequences of the assassination have hardly dawned upon the British consciousness. Conservative hatred of radicals and Irish difficulties are still uppermost in their thoughts.

To the President

American Embassy,
London, July 5, 1914.

DEAR MR. PRESIDENT:

There is nothing on the docket here but Mexico—and only the general question and no specific phase of that—and—House. He's as great a joy as Mexico is a sorrow. About Mexico I am talking with the Government folk and with the

[13] The Duke of Teck—a title exchanged in war time for that of the Marquess of Cambridge—is the brother of Queen Mary.

[14] See Vol. I, Chapter IX.

newspapers. The poor Government folk are driven and worried to death with two armies in Ireland, besides the King's Army, and with budget troubles without end, and they are glad to be relieved of any immediate crisis in Mexico. I saw Sir Edward Grey at dinner two nights ago, looking much worried. I am told that he has lately threatened to resign from the Cabinet because something displeased him. A threat of resignation from him is a compelling argument: they couldn't afford to lose *him*. Our talk was all about—poetry; and he hurried away to the House of Commons as soon as coffee and cigars had been served. The Prime Minister I saw last night at the French Embassy. He's yet somewhat of a riddle to me. But there's no doubt that *he's* worried.

The bitter feeling becomes more bitter all the time. Since I've become an Oxford man,[15] I've seen it even in college life. A Tory M. P. the other day met the best friend of his college years, who is a Liberal. The Liberal walked up to his old friend with an eager greeting—"How are you, Jack?" and the Tory M. P. put his hands behind him and said: "I'm sorry, but I am not now keeping company with Radicals." Two nights ago the jibes of both parties came near to a fist fight as the members were going out of the House—all of which means that the revolution is making progress but that it is meeting desperate tactics by the opposition and the tension is indescribable and—painful. It wears even a spectator to weariness. But I am keeping House's ball rolling (slowly) with Sir Edward Grey, and House and Spring-Rice and Tyrrell and Haldane and I are to lunch together in a few days. Then a few days later, the Prime Minister is to dine with me—all designed for talk about House's big plan. You can't talk with them except at luncheon or dinner—food with talk every time. They're trying to find something to say to Germany, which is hard because they don't fundamentally trust the Germans. Grey is deeply in earnest, but he can't get rid of the fear that the Germans may misuse his approaches and turn them against him. But the German Emperor has sent for his Ambassador here, who is now at Kiel for ten days. That *may* mean something. I'll give the Ambassador a chance to tell me as soon as he comes back.

The Greek Minister came to see me yesterday excited with joy. He's one of the ablest and most agreeable of the whole diplomatic corps. He wished to express his unbounded thanks "to your far-seeing, wise President, who has enabled us to prevent war." I confess he made a quite convincing statement of his case, as he had done to me once before. Since I telegraphed the Department about criticisms that had reached me, I have heard nothing more of them. Symington (our Naval Attaché) is keeping in close touch with all the naval people and he will tell me if they continue to talk. But Gennadius, the Greek Minister, while he is, of course, making out his own special case, is a broader and wiser man, by far, than the mere naval man of any country. When I told him I would write to you what he had said he was greatly pleased.

The Argentine and Chilean Ministers, both quite capable men, are greatly pleased, too, that their governments are taking a hand in the Mexican muddle. They have told me over and over again that this mere fact (whatever come of the Niagara Conference) will make an immensely better feeling in their countries toward the United States. I meet one or both of them every two or three days and we always hold a mediation conference ourselves. They are proud that they (*i. e.*, their governments) are admitted to the game. The Brazilian Minister to this government was recalled about the time that mediation began and his successor is not yet come. I have it in mind to talk with the Brazilian Chargé, when I can do it without seeming to go out of my way. If I sent for him to come and see me, he'd exaggerate the importance of the whole incident. (You'd laugh a pound of flesh off, if I could tell

[15]The Ambassador had recently received the honorary degree of Doctor of Civil Law from Oxford University.

you the intricacies of diplomatic etiquette at a court even no more formal than this.) I meet the Argentine and Chilean Ministers anywhere, any day—the last time at a big dance, where we sat in a corner and settled the South-and-Central American troubles. This easy way of doing things comes of their having attractive wives who are sought at big social functions—one of them, by the way, a countrywoman of ours. This is a big thing—having these A. B. C. governments in this game. These men here very frankly express their pride and satisfaction, and their wives quite as freely.

It's rather exhilarating: at this moment the British Government (in House's big plan), the Greek Government, the Argentine Government, and the Chilean Government, all showing even here their great pride in having the friendship of the United States. Add to this list the Duke of Saxe-Coburg and Gotha, of whom I saw much at Oxford—for Germany, and about half the Liberian Cabinet who are in London and have asked for an audience with me this week! Those poor darkies, I'm afraid, are not men born to govern. It's hard to get the truth out of their too-much talk. But of them, later.

This letter, too, has been delayed by the 4th of July. Sports, the week-end, etc., kept many away from my reception, which I held in my house. (Your kinsman and his wife were among the 1,800 to 2,000 who came.) It's a funny thing that thousands of men, women, and children who at home never went to a reception and never observed the 4th of July in any way will so arrange their journeying as to be in London to attend the Ambassador's reception! This seems to me as odd as that newspapers in the United States (so I am told) completely turn my poor speeches on "literary" occasions so as to make me say precisely the opposite of what I did say and then abuse me for it and report that the very people here resent what I say who take the trouble to write me too flattering complimentary letters! It does beat the Dutch—this business of being an Ambassador. I made a speech at the Royal Literary Fund Dinner which half the authors in England have praised in letters to me. I confess the audience and the British public and I thought it was rather good. I hear that I'm scolded in the United States for offending all the writers in England! Of course it would be easy enough to be silent and—do only half my job. Well, for that matter, it's easy enough to go on and pay no attention to them. But I do feel very much as Mrs. Asquith feels in her safe and unladylike generalization.* For that matter, the English papers this morning do not report even you intelligently in your 4th of July speech at Philadelphia.

Yours most heartily,
WALTER H. PAGE.

*At a rather jolly and rollicking dinner of Americans last night at which Bryce and the Primate of Ireland and others told good stories, I told of the man who came to see me the other day and asked if I thought that he and his friends could buy the Panama Canal—I told it as an offset to the story of the American who is said to have tried to buy Westminster Abbey. The crowd of course laughed. My family are to-day making wagers that the American papers will report that I am trying to sell the Canal! Well, we'll see—perhaps.—W. H. P.'s note.

In July, General Huerta, the Mexican chieftain whose revolution had nearly caused serious misunderstandings between the United States and Great Britain, fled before the Carranzista forces and began those travels that took him to the United States and Spain. His elimination from Mexican politics was a point upon which President Wilson had insisted from the first.

To the President

Sunday, July 19, 1914.
Hooke Court,
Beaminster, Dorset, England.

DEAR MR. PRESIDENT:

Just this line of jubilant congratulations on the course of events in Mexico. Of course the big constructive job is yet to be done, and of course there are grave difficulties. But this is an eight-league step forward—Huerta's quiet going. With the A. B. C. governments suffi-

ciently on the job to feel a certain responsibility and with the demonstration of the rightness of your vision and method, all the quiet great forces in the world must now come to your side.

I am everywhere talking a right explanation of it, in surroundings that are yet incredulous but that are now at least eager to listen. They see slowly, but they'll now begin to see. For the moment the British press is very dense on the subject; but events are very convincing things. I send you my heartiest congratulations.

Very faithfully yours,
WALTER H. PAGE.

A fourth installment of the New Page Letters will appear in the September issue.

Lord Grey on Colonel House and Crises in Diplomacy

The Second of a Series of Installments from the British Diplomat's Forthcoming Book Entitled "Twenty-five Years, 1892-1916"

THE most difficult and dangerous controversy with the United States was over questions of contraband and the consequent interference with neutral trade, but before approaching it, let me say a word about the Declaration of London.

That declaration had never been ratified and its rules played no part in the war. It had not been the work of the Foreign Office alone: the Admiralty had been represented in the negotiations in which it was drawn up. I had, however, promoted and supported it and was the Minister specially responsible for it. The declaration passed the House of Commons, but its rejection by the House of Lords prevented its ratification. Had it been in force its rules would have hampered us in some respects, particularly in the list of contraband, at the outset of the war; and those who opposed and defeated it are entitled on this account to take credit for their action.

If, however, the declaration had been ratified and observed as a whole by all the belligerents the question as to whether the balance of advantage and disadvantage would have been in our favor or not is one less easy to answer. If it had prevented the submarine war on merchant vessels it would have saved us from our greatest peril in the war. To this it may be replied that but for the German submarine war on merchant vessels, the United States would not have come in on the side of the Allies.

The question is not worth pursuing: if the declaration had been ratified, it would have been broken. The same ruthless spirit that introduced the use of poison gas, an offense not only against the rules of war but also against all human considerations, would have made short work of the Declaration of London.

One lesson from the experience of the war is that we should not bind ourselves to observe any rules of war unless those who sign them with us undertake to uphold them by force, if need be, against an enemy who breaks them. We kept the rule against the use of poison gas till the Germans broke it, and when they did break it we had neither gas nor protection against gas ready. The rule was nothing but a disadvantage to us, for its violation by the Germans brought no help to us. To bind ourselves by rules which we intend to keep and others intend to break is unreasonable as long as those who break them can do it with impunity.

To return to the question of contra-

band, blockade of Germany was essential to the victory of the Allies, but the ill-will of the United States meant their certain defeat. After Paris had been saved by the Battle of the Marne, the Allies could do no more than hold their own against Germany; sometimes they did not do even that. Germany and Austria were self-supporting in the huge supply of munitions. The Allies soon became dependent for an adequate supply on the United States. If we quarreled with the United States we could not get that supply. It was better therefore to carry on the war without blockade, if need be, than to incur a break with the United States about contraband and thereby deprive the Allies of the resources necessary to carry on the war at all or with any chance of success. The object of diplomacy therefore was to secure the maximum of blockade that could be enforced without a rupture with the United States.

This was very delicate and uncertain ground. International law has always been elastic; neutrals and all belligerents with inferior sea-power always contended for rules of contraband and blockade that would involve the very minimum of interference with trade. Germany and the neutrals were therefore at the same point of view in this matter.

A belligerent with superior sea-power always contended for an interpretation of international law that would justify the maximum of interference with goods that might conceivably reach the enemy. Britain and the Allies having superior sea-power naturally took the latter view. The British contention had not always been the same. When we were a neutral we had in the interest of our commerce disputed the maximum right of interference claimed by belligerents, as in the war between France and China, when the French declared rice to be contraband of war.

The Navy acted and the Foreign Office had to advance the argument to support the action. It was anxious work. British action provoked American argument; this was met by British counter argument. British action preceded British argument; the risk was that action might follow American argument. In all this, Page's advice and suggestion were of the greatest value in warning us when to be careful or encouraging us when we could safely be firm.

One incident in particular remains in my memory. Page came to see me at the Foreign Office one day and produced a long dispatch from Washington contesting our claim to act as we were doing in stopping contraband going to neutral ports. "I am instructed," he said, "to read this dispatch to you." He read and I listened. He then said: "I have now read the dispatch, but I do not agree with it; let us consider how it should be answered." On other occasions he would urge us to find means of avoiding provocation of American feeling; for instance, he urged us to find some way of acting other than by Orders in Council, which since 1812 had had such odious associations for the United States. He knew that these were only a matter of form and that there was nothing in them intrinsically offensive to the United States, but the name was hateful in America. Unfortunately, Orders in Council were formalities essential to make our action legal in British courts of law and we could not do without them.

The Germans were naturally active and ingenious in devising means to exploit and cultivate this ground so fertile for quarrel between Britain and the United States; and they had plenty of clever agents and friends in America to help them. A ship would be chartered with contraband; the name of the ship and its intended voyage would be carefully revealed; American attention would be drawn to it; American feeling would be instigated to the point of readiness to resent British interference with it. The ship would then start; if we interfered with it we ran the risk of provoking an outburst of opinion in America that might be formidable; if we allowed it to pass we stultified our own action in other similar cases and admitted that our blockade was ineffective or non-existent.

The *Dacia* was an example of this. Everybody knew what the *Dacia* was,

when she was to sail, and where she was going. She was an open challenge to our blockade which we were bound to take up. Page suggested that the French Navy instead of the British should intercept the *Dacia*. This was done, and there was not a murmur in America. We used to hear it said in days when Bryce was Ambassador at Washington that he was the most popular European in America since Lafayette, but it was the memory of Lafayette that persisted through the war. France was the historical friend and Britain the historical enemy. It was possible in notorious cases such as that of the *Dacia* for French action to disarm American resentment and to counter German manœuvres, but in the nature of things the bulk of the blockade and contraband operations had to be carried out by the British Navy, which was not only the larger, but the better equipped for this purpose. The burden of defending it fell upon British diplomacy, the Foreign Office, the Board of Trade, which controlled British exports, and the Admiralty devised or executed the measures we took.

The Secretary for Foreign Affairs was bombarded with the protests from neutrals that ensued. Much of his time was spent in reconciling neutral countries to what we were doing, justifying British action or promising inquiry, as the merits of each protest might seem to require. In the interest of the Allies, and of Britain in particular, it was desirable not to lose the good will of neutrals, but the task of soothing and reconciling them was difficult and thankless. . . . The stopping of contraband must mean annoyance to neutral trade and shipping, and yet it had to be maintained.

THE question of cotton needs a little more explanation. It was important enough to be considered separately by the Cabinet in the early stage of the war. I thought it inadvisable to make it contraband. One reason has already been given; but there was more than that to be taken into account.

The cotton-growing states of America were hard hit in 1914 by the outbreak of the war. Their trade was temporarily disorganized if not altogether suspended; that was not the fault of Britain, it was due to the war. But if cotton were made contraband, this would be regarded as a fresh blow dealt mainly by Britain to an important industry of the United States, when it was already in distress. The attitude of the United States was going to be important and might be vital in the war; there were already materials enough for friction between us and the United States; the fomenting of these was the trump card of German diplomacy. My opinion was very decidedly that there was far more to be lost than to be gained by making cotton contraband in the first year of the war. The Cabinet took this view; it was right, even more right than we knew at the time.

After the war, when I went to America in 1919, an American of very high position in the business world and friendly to us, volunteered the remark that it was very fortunate that we did not declare cotton contraband in 1914. I said that I had felt this at the time, but I was not quite sure what the consequence would have been; my fear was that the United States would begin convoying merchant ships possibly to enemy, certainly to neutral ports; in this event we must have let the convoys pass, which meant giving up our blockade and the stopping of supplies to Germany, for convoying once begun would not have been limited to cotton, but would have covered other things in which American trade was interested. Our only alternative would have been to stop the convoys by firing on the American ships of war that accompanied them; this meant war with the United States.

Later on cotton was made contraband, with a guarantee of a minimum price—that was when the trade had recovered and the cotton states were not in acute distress. The Germans at once found a substitute. Had we made it contraband in 1914 we should have run all the risk I have described, and gained nothing.

In all this discussion of contraband with the United States we were like men who had to steer a ship through an uncharted sea, perilous with shoals and rocks and

treacherous currents. We kept on our course, and came safely through, but we had to feel our way and often to go slow. It is to be hoped that those who think we ought to have gone straight ahead on higher speed may never have to make that voyage.[1]

AFTER the United States came into the war all these difficulties disappeared. There was no longer need to prove that goods going to a neutral port were intended for Germany; the prohibition to export copper or other contraband from neutral countries into Germany was no longer accepted as satisfactory. Neutral countries able or likely to supply Germany were rationed; their own need was assessed and they were allowed to have so much and no more, in order that they might have none to spare for Germany.

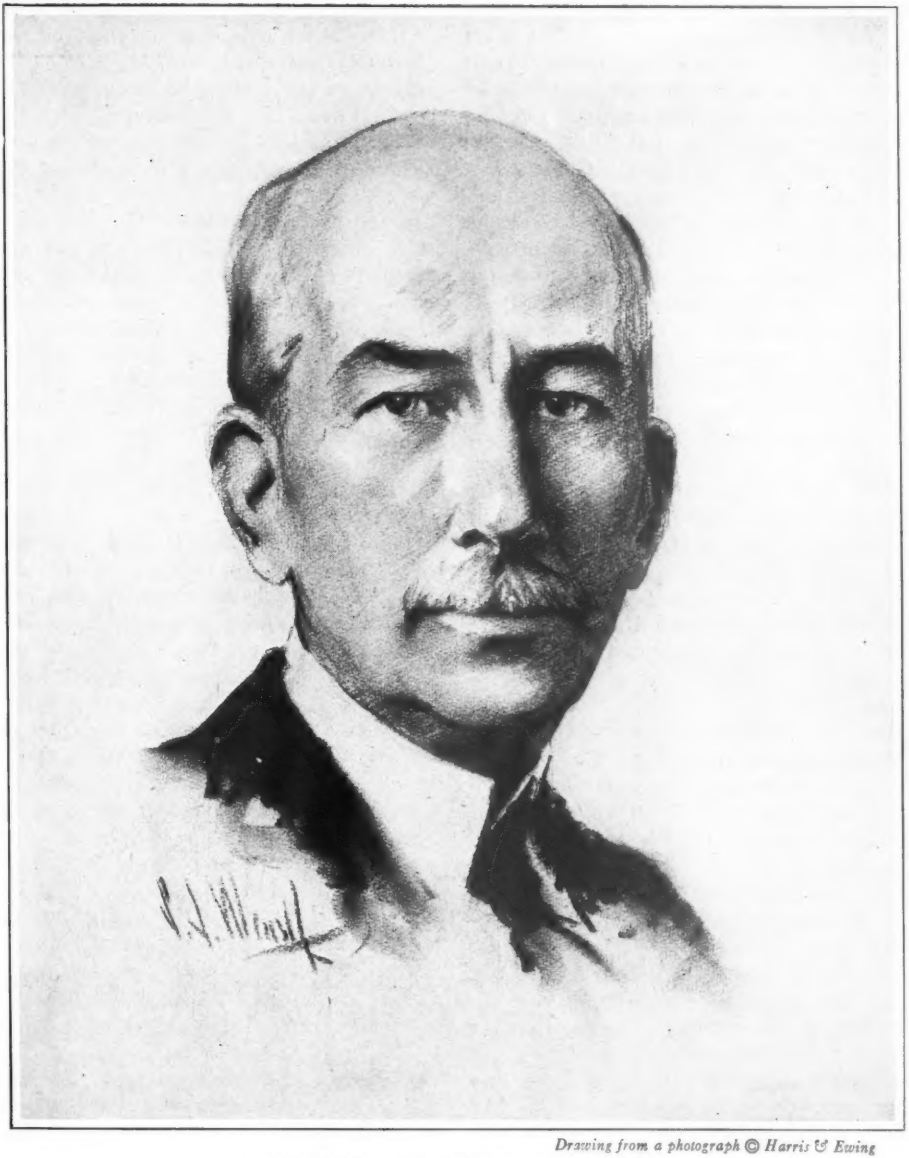
That was a blockade such as the world had never known, but it was possible only because the United States was not criticizing but coöperating. I was out of office then, and I read one day in a newspaper that people in America were saying: "We can't think why this was not done before." The reason was that the point of view of the United States had changed from that of a neutral to that of a belligerent with superior sea power.

There was another and larger aspect of the diplomatic field in the first years of the war which much concerned the Secretary of State for Foreign Affairs in London and the British Ambassador in Washington. It has been noted already that the attitude and policy of the United States were not to be influenced by the military course of the war. Whatever division of sympathy there might be in different sections of its people—some pro-British, some pro-German, all well disposed to France, all with an antipathy to Russian Tsardom—there was probably a widespread consciousness or subconsciousness that a German victory would mean a Prussianized Europe; and that this would be inimical to American ideals of world polity. German victories, therefore, would not predispose American opinion to side with Germany against the Allies. With America, diplomacy did in consequence have a fair field and counted for something either to alienate or to attract. The Germans were quick to see the importance of this field; they sent their cleverest agents to America, and there was a real diplomatic struggle between the diplomacy of the Allies and that of the Central Powers.

The Secretary of State for Foreign Affairs had to exercise himself on the same ground in many interviews in the Foreign Office in London. Americans came over to Europe to explore the ground to see what opportunities there were of making peace. To examine the mentality of the combatants they went to Berlin, and were received by the Chancellor or by high officials. Each was presented with the view that Germany was prepared for peace on moderate terms, but that it was the Allies, perhaps Britain especially, that were the obstacle to a reasonable peace. These Americans came to see me in London, and I did my best to put the situation in what I thought its true light. It was an immense relief not to have to do this with the American Ambassador, as well as with unofficial persons; it was a still greater relief to feel sure that if Page's own countrymen were interviewing him as well as myself, they were getting from him a view of the merits of the war that was not unfavorable to the Allies.

DURING all the time that I was in office Colonel Edward M. House was more in the confidence of President Wilson than any one else known to me. He and I had met pleasantly enough once or twice on his visits to London before the war. He came to London in the early weeks of the war as President Wilson's

[1]It is known now that in Germany during the autumn and winter of 1916 the military authorities pressed for unlimited submarine warfare in disregard of all considerations of international law or diplomatic expediency. They carried the day. Their action brought the United States into the war and ended in the defeat of Germany. If the British Government had been overborne by those who wished us in matters of contraband to set aside all legal and diplomatic considerations the result might well have been the defeat of Britain and the Allies.



Drawing from a photograph © Harris & Ewing

COLONEL EDWARD M. HOUSE

friend and confidant. No official business was transacted through House; that was all done through Page.

When House came to London after the outbreak of the war our conversations almost at once became not only friendly but intimate. I found combined in him in a rare degree the qualities of wisdom and sympathy. In the stress of war it was at once a relief, a delight, and an advantage to be able to talk with him freely. His criticism or comment was valuable, his suggestions were fertile, and these were all conveyed with a sympathy that made it pleasant to listen to them. After a day that began about seven in the morning I broke off work by seven in the evening and took things easily at my house for an hour before dinner. It was arranged that in this hour House should come whenever he wanted to have a talk. In this way we had many conversations that ranged over a large field of human affairs. I possess no record of these; they were for the most part too informal to be recorded, and the only record I have consists of one document that was one of the only two papers, private or official, that I deliberately took home with me when I left the Foreign Office and London towards the end of that year.

In the absence of notes taken at the time, no attempt will be made to give House's views in the form or in the language in which he expressed them. What follows will be the impression conveyed to me by him, reproduced in my own way.

House left me in no doubt from the first that he held German militarism responsible for the war, and that he regarded the struggle as one between democracy and something that was undemocratic and antipathetic to American ideals. It was not necessary to spend much time in putting our case to him. He had a way of saying, "I know it," in a tone and manner that carried conviction both of his sympathy with, and understanding of, what was said to him. I felt sure that he did not differ much from Page in his view of the merits of the war; where he differed from Page was in his view of what President Wilson could or ought to try to do.

House considered that the United States could not be brought into the war in the early days; immediately after the sinking of the *Lusitania* he thought this might have been possible, but with the exception of that passing moment he considered that an attempt to bring the United States into the war would be premature and unsuccessful. His mind was always practical. He was not less studious of the means by which an end was to be accomplished than he was of the end itself. In this awful calamity of war the end to be sought and worked for was a just, fair, and reasonable peace. He was in Europe to study the situation, to investigate the means by which such a peace could be brought about, and to inform and advise his friend at the White House thereon.

House followed public affairs with the close attention and informed himself about them with the industry and zeal of a man who lives for a public career. Yet a public career was what House desired to avoid for himself; his mind therefore worked with all the keenness of one who feels the spur of ambition, but with the free impartiality of one whose ambition is quite impersonal. He longed to get good accomplished and was content that others should have the credit. His judgment of men and things was both keen and detached. Believing that to work for the entry of the United States into the war was not yet practical politics, he set himself to consider how the influence of the United States could be used most effectively to bring about a good peace.

A rapid and complete victory of Germany or of the Allies would give the best opening for the intervention of the United States; prolonged deadlock and stalemate might make the influence of the United States, exercised diplomatically with the whole of American sentiment behind it, decisive and paramount. After the Battle of the Marne stalemate seemed much more probable than complete victory. House thought this the most likely con-

tingency and worked earnestly and continuously so to prepare the way as to make it certain that the United States would exercise its influence effectively in a good peace; and the essential point was that everything should be ready for the first opportunity, that it should be decided what peace terms President Wilson would consider to be fair and to what length he would go to secure them, if he were assured that one side of the belligerents would accept them. House agreed that the moment for President Wilson to propose a conference had not yet come, but it would come, if either side were ready to accept a conference and the terms for which the President would help with the whole force of American opinion.

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Thirteen Miles Through Granite

An Article on the Sierra Tunnel of the California Edison Company

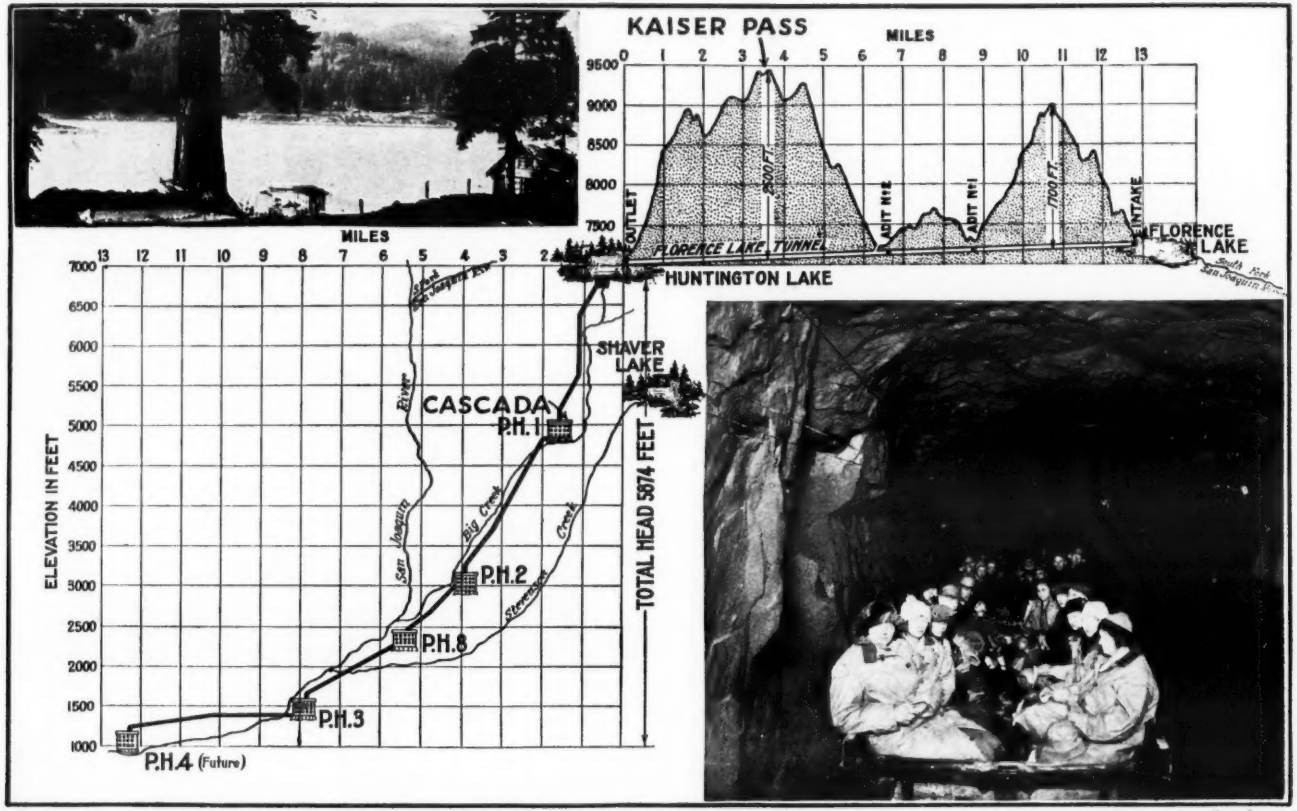
By FRENCH STROTHER

LET your mind's imaginative eye rest for a moment on two scenes: First, the streets of Los Angeles on a winter's evening as the theaters are closing and the throngs of spectators flock through the mild air to their homes. Street cars, for a rushing hour, carry an extra burden. Electric lights flash on in thousands of homes as their occupants return.

The second scene is two hundred and fifty miles away to the north, in the almost Arctic stillness of the mid-Sierra. Here tall pines stand ghostly-white in the snow, under the stars, on a steep mountain slope at a mile's elevation above the sea. In a lonely, barn-like concrete building, a solitary watcher sits before an instrument board, hearing no sound but the hum of electric generators and the wash of waters in the tail-race below. Off in this isolated mountain fastness, sixty miles from the nearest town, he sees a little needle on one instrument swing steadily to the right. To him it means that an extra burden is being laid on his generators by the power used in distant Los Angeles, so that *his* mind's imaginative eye recreates our first scene, and he knows that the far-away theaters are closing and their throngs of spectators are reaching their homes.

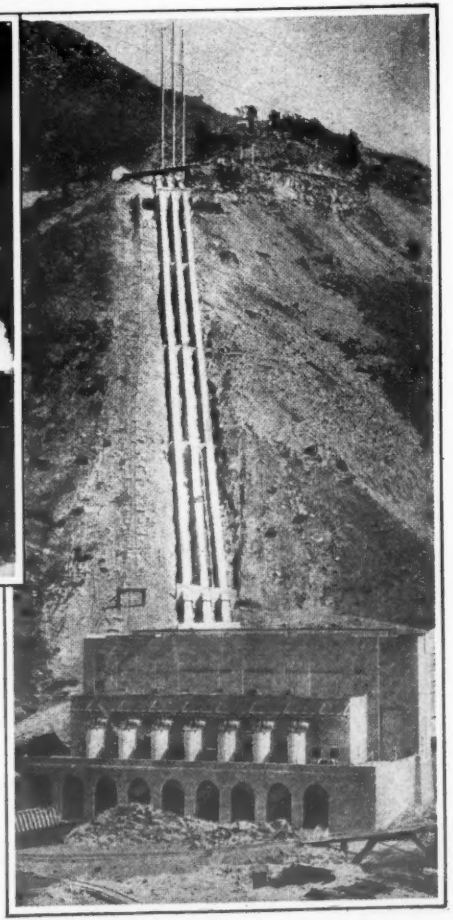
John Eastwood, the originator of the dream that penetrated granite, is on the left. From a photograph taken under a giant sugar pine in the Sierras.

Three hundred thousand horsepower of electrical energy is continuously developed



HOW THE DROP OF WATER BECOMES ELECTRICAL ENERGY IN ITS RACE DOWN THE SIERRAS

From Florence Lake, not yet completed, the water surges through the thirteen-mile tunnel to Huntington Lake, which is shown in the insert on the left, and then proceeds from power house to power house, turning wheels and creating new electrical energy in each one. The thirteen-mile tunnel is fifteen feet square, large enough to carry the trainload of visitors who are shown in the picture at the lower right. The map shows the power houses and the mountain range. At Cascada the railroad ended, and thence supplies had to be carried in summer over Kaiser Pass, 9,300 feet above sea level.



These pictures show graphically how the water is plunged downhill into the power houses. Power House No. 1, in the center, is viewed from a cave in the granite mountain at the left, down which the water is shot through steel penstocks, thus creating the energy which lights distant Los Angeles. An idea of the penstocks may be gained from the picture of Power House No. 3, at the right. These penstocks, which are really millraces built at sharp angle, are constructed of steel sections twenty feet long, and varying in diameter from seven and one half feet to four and one half feet, the smallest section being nearest the power house. Atop the penstocks are air vents, 200 feet high and three feet in diameter, which prevent the creation of a vacuum by the rushing waters, and the consequent collapse of the pipe lines.

In the winter locomotives must fight their way through the snow to the railhead at Cascada.

From Cascada a "musher" and dog team in winter carry mail and films into the snow-locked camps.

in that lonely mountain region, and is carried southward across canyons and over passes, traveling through inch-thick cables, under terrific pressure, to drive the motors of industry, and to light the homes of a million human beings nearly two hundred and fifty miles away. Every pulsation of that energy is the transformed power of the falling weight of a drop of ocean water, which was first lifted into the clouds by the sun's rays, driven eastward by the Pacific trade winds, congealed into snow by the cold upper airs, precipitated upon the lofty Sierran summits, melted again by the sun, caught in man-made mountain lakes, led through man-made tunnels and penstocks, through man-made water-wheels turning man-made generators, whose electrical power is carried back to a city within sound of the ocean's surf, to serve the needs of man.

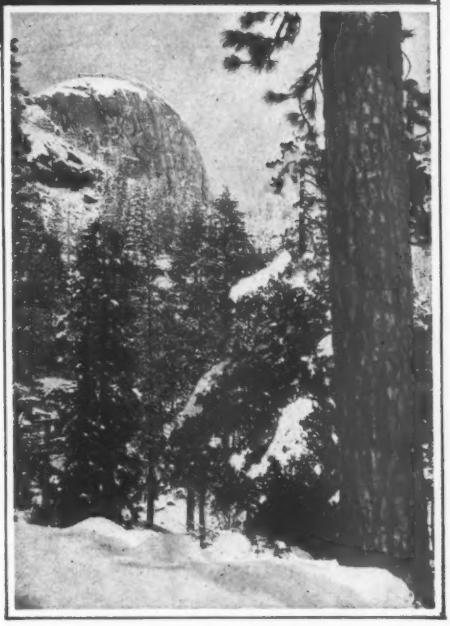
This, then, is a story of Water and Man.

It might be called the story of Water and A Man. John Eastwood is dead, but he lived to see his dream come true. John Eastwood lived in a desert valley, but his name, like the poet Keats's, is writ in water. He was the superintendent of the city water works at Fresno. He pumped water to quench people's thirst. Then he explored the streams in the mountains above Fresno. He saw how mountain meadows could be dammed and made into lakes, and how their waters, led through tunnels to the brink of precipitous mountain-sides, could be

Perhaps vistas like this on Big Creek inspired John Eastwood, who conceived this dream of water power.

carried through steep pipe-lines in controlled cataracts to turn water-wheels to run saw-mills in the forests. Later, when the generation of electric power by falling water was perfected at Niagara, he altered his plans to use the Sierra water in this way. In 1896, backed by local capital, he built the first hydro-electric plant of consequence in the Sierra, and carried its power to Fresno, sixty miles away—then a feat of world-wide interest in long-distance transmission.

John Eastwood lost control of his pioneer company, but his dream survived. His plans were right. Los Angeles, outgrowing its near-by resources of electrical energy, reached north for others. A Los Angeles company acquired John Eastwood's company and his plans. They improved the technical details, but his major ideas they have followed strictly to this day. Swiftly, to meet the rapid growth of the southern city, these northern mountains have seen John Eastwood's vision come to reality in massive concrete dams and power-houses, holding the waters of the mountain streams in beautiful lakes that he foresaw, yielding



In winter the granite mountain above Power House No. 1 takes on the aspect of a glacier.

up their energy as electrical power to serve an unseen, distant multitude. Los Angeles owes its very existence, in large measure, to this man whom few of its citizens ever have heard named. And when, last summer, with truly poetic appropriateness, John Eastwood ended his career by drowning in one of these

E. R. Davis, who is shown in the insert, believed in feeding the men seven meals a day if they wished them, and to save time he hauled a special dining train into the tunnel.

very mountain streams, probably not a score of people, of the millions he had benefited, recalled or even knew their debt to him.

The poetic conjunctions of Fate were not concerned in John Eastwood's death only. They dealt also with the fruition of his dream. When, in 1896, he built his first hydro-electric plant on the north fork of the San Joaquin River, a boy from Fresno worked on that job as a blacksmith's helper. E. R. Davis was a widow's son, who did not have the means to complete his high school education. His work on the Eastwood project, however, fired both his imagination and his ambition. When it ended, he moved to Southern California. By day, he did what came to hand, from working as a lineman, up. By night, he studied engineering in a correspondence school.

In twenty years, he was general manager of the Pacific Light and Power Company, one of the two largest electrical companies in Los Angeles. Then the financial genius of John B. Miller brought about the amalgamation of practically all the electrical interests of that region in the Southern California Edison Company, and Davis was made manager of construction of the enterprise. Backed now by Miller's boldness and vision, and by the almost limitless financial resources he had summoned, the Eastwood dream became part of a great practicable scheme of power development, made commercially feasible by the needs of growing Central and Southern California. And Ed Davis, the blacksmith's helper on Eastwood's first little hydro-electric construction, was the man chosen to build his larger dream into realities.

In the last five years, Davis, acting under George Clinton Ward, vice-president in charge of all construction work of the company, has spent $110,000,000 of the company's money to do the things Eastwood had planned to do. And in another ten or fifteen years, present plans call for the expenditure of $400,000,000 more, to complete the remaining units. John Eastwood's waterborne spirit, wandering unseen above the Elysian mountain meadows, among the clouds that feed his mountain lakes, must be serenely confident of a perpetual memorial, for a hydro-electric plant, once built, is practically indestructible, immortal. As Kipling sang,

"After me cometh a builder: tell him I, too, have known."

Two illustrations that accompany this article tell something of the magnitude of this undertaking. Words can tell something more. The first great reservoir in this system is Huntington Lake. Its watershed was insufficient to meet the growing demand for power, so Eastwood's plan was followed, by turning Florence Meadow into a lake, and piping its waters to Huntington. The difficulty of this task lay in the fact that Florence and Huntington are separated by a granite wall of mountains called the Kaiser Range, and the lowest pass between them is twenty-five hundred feet above the lower lake. The "pipe" had to be a tunnel, fifteen feet square, and thirteen miles long, blasted through solid granite. At one point, this tunnel is more than half a mile below the surface of the earth.

These difficulties sound staggering, but there were others. Every foot of progress in cutting the tunnel through the granite called for the use of one ton of supplies. As the tunnel is 79,000 feet long, the complete job called for the delivery, to a remote mountain valley, of 79,000 tons of supplies. This prodigious quantity of blasting powder, steel drills, food, and other material, had to be transported from sea level to 5,000 feet elevation by train over a tortuously crooked railroad, and then by motor truck over a pass at 9,300 feet elevation, to reach the men that used them. And they had to be moved in the four or five months of summer, because the road over Kaiser Pass is twenty-seven feet deep in snow in the winter.

Two thousand men worked four and a half years to dig the Florence Lake Tunnel. For many months in winter they were snow-bound beyond the Kaiser Range, cut off from the world as if they were at the North Pole, living in their own little city by night and working by day underground to mine out the tunnel bore. To keep them in touch with the world, an Alaskan "musher" and his dog-team were imported from the American Arctic, and every day they carried the mail in to Florence Lake over Kaiser Pass from Cascada, on the western slope. Once a week, they brought a new motion picture film, for free exhibition to the workers.

Florence Lake Tunnel was finished last April, and another watershed was thus brought into man's control, to spin the wheels of industry.

To some minds, great undertakings of this nature are impressive by the sheer physical magnitude of the elements involved. To these, the millions of dollars spent, the tons of rock and materials moved, the miles of space traversed, are the significant things. To other minds, the scientific achievement holds the chief appeal. To these, the magic of the transmutations of solar energy are fascinating, ordered miracles; the lifting of invisible vapors from the ocean's breast, their passage through space upon the invisible wings of the wind, the mysterious transformation of their hidden energies into the death-dealing and life-giving invisible currents of electricity.

But to most minds—and properly—the true marvel of these great achievements lies in the adventurous spirit and indomitable courage of man that they reveal. Big Creek is another Panama Canal—equaling it in bigness of conception, cost of execution, difficulty of accomplishment, and permanent usefulness as an instrument of man's progress. But the real significance of both is their proof of man's vision, courage, industry, skill, and the capacity of thousands of human hearts to fix upon a common goal and work together to attain it. Because John Eastwood saw visions and dreamed dreams, children in Los Angeles can sit before motion picture screens and see the history of the world's making, and its progress day by day. Because John Miller has wrought skillfully on the spirits of monied men, housewives in Santa Monica can more quickly leave the heat of their kitchens and find refreshment on the beach.

Because Ed Davis is a born builder and leader of men, the thousands of other men in Southern California who are making

the food and shelter of all the families of that region have at hand the power greater than the power of horses to command. And because five thousand nameless, necessary workers, from muckers up to chief engineers, each forgot self and gave himself to the common conquest of rock and water, the whole multitude of human beings on the plains below have a service of energy that makes it possible for each one swiftly to communicate his thoughts, to move his person or his goods, to lift his burdens, and to enlighten his darkness. The whole picture, the whole achievement, is a dramatic bringing to tangible reality, in stone and steel and power, of the unseen forces of human nature—the tremendous creative forces of human imagination and coöperative good-will.

Coöperation and good will have seldom been better illustrated. When John Miller took the leadership in the electrical industry of Southern California, all public service corporations, the country over, were under public attack, on the ground that they were monopolistic, indifferent to the interests of their patrons, and that they were managed solely with an eye to the profits of their owners. Retaliatory measures, such as severe regulation, drastic taxation, and limitation of profits, were undertaken by legislatures and city councils. Talk of government ownership was getting to the point of action.

John Miller entered this atmosphere of distrust and hostility with a plan of peace and coöperation. He announced that he was going to sell the electrical industry, not to the city, but to the consumer. Private ownership was to give way, not to public ownership, to become the sport of politics, but to the ownership of the people who bought the electricity. In a few years, by selling a share or two of stock apiece to the housewives and merchants and farmers who bought his power, John Miller had transferred the ownership of the electrical industry from the hands of a dozen millionaires to the hands of the thousands of consumers. To-day, the stockholders of the Southern California Edison Company number 70,000, of whom 63,000 are consumers. (Ninety per cent. of the employees of the company itself are also stockholders.)

Thus, the $200,000,000 of capital assets of the company are now in the hands of the people the company serves. They are no longer disposed to consider political ownership and political management of what is now their own investment. And they are glad to finance the extensions of the far-seeing plan of development of the Sierran source of their own power, to keep pace with the growth of their community. This plan of John Miller's has been so successful that it has been adopted by public service corporations the country over, most conspicuously by the American Telephone and Telegraph Company, and with great success.

Ed Davis's success as constructor of the plants of the company is equally an illustration of the power of coöperation and good-will. When he began this gigantic physical task, the Far West was aflame with the violent doctrines of the I. W. W. Real grievances of the ordinary laborer had been magnified by the preachers of anarchy, until hatred was the spirit of his life and violence often his rule. Davis had worked at ordinary labor himself and determined to win cooperation by good will. He would correct the grievances first, and only meet force with force where good will should fail.

First of all, he paid all the men their full wages in cash, without the usual deductions for charged articles at the commissary. This move corrected at a stroke the ancient abuse of the "company store" that has cursed construction camps from immemorial time. A company store was provided, but it was run as any private merchant's store is run. And though the goods had to be carried by train and truck to a remote mountain region, every article was priced at the lowest price for which it could be bought in a department store in Los Angeles.

The next evil that Davis attacked was the evil of the hobo. In Western parlance a hobo is not a tramp. A hobo is a migratory laborer, who carries his blan-

kets on his back, looking for work. A picturesque Western synonym more accurately describes him—he is often known as a "blanket stiff." The roll of blankets is carried because Western ranches and lumber camp owners and construction camp bosses have not provided anything in the way of sleeping accommodations for their men, beyond rude bunk houses in which the men found rough board bunks lined with straw upon which to stretch their own blankets.

Davis attacked the blanket evil for several reasons, but all of them came to the same thing—he was dealing as a man with other men, and he wanted them to respect him and respect themselves, as men should. Men with ragged blankets, men with vermin-laden blankets, could not feel the dignity that belongs to them as men; and unless they had that feeling they would not be as good workmen as they ought to be. Davis supplied fresh, warm blankets at wholesale prices, and a decent bed to put them on, and hot shower baths to be used before bedtime. No man on Big Creek was allowed to use the blankets he brought himself unless they were adequate, and then only after thorough disinfection and washing. Weekly washing of all blankets, in a steam laundry, at a nominal price, thereafter kept them all in good condition.

If these details sound trivial in the record of a great undertaking of this kind, it may be well to pause long enough to explain that exactly these details are the things that so raised the morale of the army of men on the job that the building of Florence Lake Tunnel was completed in twenty-two months less than the time allowed by the engineering experts who had planned the work. Calculate the wages of two thousand men for twenty-two months, the interest on an investment of $100,000,000, and the earning power of the completed plant, and you gain a new idea of the money value, to say nothing of the human values, of these details.

Good will and wisdom went also into the reform of the food supply. The characteristics of the ordinary "chuck house" of a Western camp may be gathered from the nicknames that have grown up to describe the food. Where butter is usually called "skid grease," and coffee "slum," there is no need for further description. Davis changed all that. He installed refrigeration plants in his camps, so that he could keep meat and perishable supplies without spoiling. Then he employed experts to get the best food that money could buy. And then he employed railroad dining car chefs to cook it, and dining car stewards to supervise the serving of it. No money was wasted on fancy tables or dishes or cutlery. But everything was kept scrupulously clean. And when the food came to the table, it was good food, in great variety, cooked by experts, and served palatably.

Fresh vegetables were provided in season. The bread was as good as a first class restaurant serves. The butter was real butter, and fresh. The coffee had aroma and flavor as well as a "kick." The author of this article has worked on Western ranches and in Western lumber camps, and he writes with knowledge as well as with feeling about the way a working man feels after his empty stomach has been insulted with bad food after a hard day's work. He has also eaten with the men at Big Creek, and the difference is as between the Last Chance Restaurant in a desert village and the best hotel in New York City.

A little added touch of human understanding completes the picture of the reform in food. When a man comes up from the warm, still air of the valleys, into the mountain elevations, with their bracing coolness, and gets the odor of pine trees in his nostrils, he develops an appetite that astounds him. Add to this, that many of these men appear on the job, undernourished from bad food, and plunge at once into hard manual labor. Their bodies simply shout for fuel. Now, the company charged thirty-five cents a meal, and they consequently deducted a dollar and a nickel a day from the men's pay to cover the charge.

At the end of the month, the stewards

found that they had served more meals than were represented by multiplying the number of men by the number of days by three. They began checking up, and they found that some of the men were eating six and seven meals a day! They reported this fact to Davis, and asked for instructions. He studied the thing out and found that these were the new men on the job. He promptly issued instructions to say nothing to them; let them eat all they could hold, without comment or extra charge; if they ate seven meals a day, they needed them, and anyhow, they were translating that extra bread and beef, by way of increased energy and muscle power, into more pounds of rock per day dug out of Florence Tunnel.

All these little yet big items of thoughtfulness concerned the common run of men on the job. But the college trained engineers, responsible for the grades and tangents and rock-stresses, whose mistakes could cost thousands, could tell their own stories of acts of equal consideration toward themselves, of special recognition of their work obtained for them in the technical journals and the professional colleges, and of an unusual interest in their individual success.

Some of the achievements of these engineers deserve an article to themselves. They were not content to work only with the tools of their profession as they came to them. For example, when they found that they were being delayed two hours by powder fumes after every blast in the deep tunnels, they went East to the powder manufacturers and demanded special research work to cut down the asphyxiating properties of the explosives. The manufacturers' chemists studied the problem and found that the deadly fumes came, not from the powder chiefly, but mostly from the paper wrapping of the cartridge! (The old argument over again about the tobacco and the paper in the cigarette.) By changing the paper on the outside of the cartridge, they cut down the time the men had to wait after a blast, from two hours to only thirty-five minutes!

Hundreds of such instances of improved practices, initiated by these men as they met the emergencies of their work, could be recounted. They tell the same story, of the power of a common vision of a great task, supported by a sense of the lively coöperation of all the other men involved, and inspired by an enveloping atmosphere of human personality and good will, to stimulate and unify the spirits and the labors of thousands of men upon a common purpose. At Big Creek, faith literally has moved mountains; and, as with Moses, from the smitten rock waters have gushed forth.

The Religion of the Scientist

By ALBERT EDWARD WIGGAM

Author of "The New Decalogue of Science"

IF SCIENCE has done nothing more than to bring men speed, comfort, luxury, and things to make money with and play with, it is not worth the price we have paid for it.

Unless it has brought men a better religion, sounder morals, and a richer humanism, then the old days of dogmatism, ignorance, superstition, hate, war, persecution, and bloodshed which have been the fruits of all the religions of the past were better, I think, than the prospect which lies ahead.

For if dogmatism becomes armed with the instruments of science, especially with its ease of communication and power of propaganda, then the days when woman's beauty and man's heroism were thrown into the lion's mouth for so-called conscience's sake and in the name of religion will seem like good old days, indeed. Hell hath no fury equal to dogmatism and bigotry with science as their handmaiden.

And this is precisely the situation which faces both science and social order throughout the world to-day. For science has given men its products and instruments, but it has not given them its religion, its ethics, and its humanism. It has given men its material life, but not its spiritual life; it has not taught the masses of men a new way to live.

And the new way of life which science has brought into the world is a very simple one. It is merely the life of inquiry, of open-eyed wonder, of willingness to change one's mind in the presence of fact, of fearless acceptance of truth whatever it may mean to established institutions or doctrines, of an endless seeking after God in the hope that haply it may find Him. In all its history science has never persecuted anybody. Throughout all history dogmatic religion and religion based upon authority has persecuted wellnigh everybody. But science comes to men with no blood upon its hands. It offers its ministry to men with a past as unsullied as the morning and with a spirit as fresh as youth and as tolerant as the sunshine.

Nevertheless, the practical danger is this, that science has mechanized all civilization. It has invented a world-machine. And after it invented this world-machine the business men and politicians ran away with it and thought they could manage it without the scientific spirit. But science cannot emancipate men unless they catch its spirit. The passion of science is to teach, to enlighten, to free.

But when men take possession of its machines, its chemicals, and its communication and transportation without its liberalizing spirit they exploit men and exploit life—they do not teach, nor enlighten, nor free the human spirit. They chain men to bigger and bigger machines beyond their power to understand or to control. They make new devices for war; they use propaganda to control opinion; they use the power of law and government and the courts and press to throttle free thought and free teaching. They build schools for their children with the aid of science and then gag the teachers within their walls.

And dogmatism with the added power of scientific instruments and inventions is the most dangerous thing to common men which has ever entered the world. Science has done three things. First, it has explored the workings of the universe and in doing so has given us the technical methods for finding the will of God and of serving Him. Second, it has given us a new and larger and more intelligent and at the same time more loving conception of God. Third, it has given us the technical methods for putting the will and ways of God into effect in our social

political, educational, and religious organizations, thus guaranteeing a richer and more fruitful life to all men. These are but a few of the great new values and meanings which science has given the world and by which a true social and political religion can be made a reality. But if dogmatism controls these results of science and bends the instrumentalities of science to its own uses, then the day of hope and liberty for the masses of men is all over. For, as I have said elsewhere, the social organization of science is the technical administration of the love of God.

II

IT SEEMS to me that any liberal-minded Presbyterian or Methodist or Roman Catholic or Baptist or Jew can readily espouse the religion of science and find himself at home amid its newer and richer conceptions of righteousness, of service, of health-bringing, of worship, and of God. Thousands of them have done so. Such men, for instance, as John Haynes Holmes, Harry Emerson Fosdick, Rabbi Goldenson, Rabbi Wise, John Dewey, Everett Dean Martin, James Harvey Robinson, Irving Fisher, Glenn Frank, Thomas Hunt Morgan, Edward Lee Thorndike, Irwin Edman, and hundreds of other fearless and undogmatic men are all exemplars of the new religious life and spirit of science. Some of these men belong to church denominations and some do not, but they all see that denominations and dogmatic creeds have largely served their purpose and that their day of usefulness is over. These men differ widely in their personal characteristics, philosophies, and views, but that matters little compared to the fact that their lives are free, their thought is free, their imaginations are free, and, without dogma or creed, their lives are one long passion for service, beauty, and truth.

Some of these new men—for they belong to a new type of men—hold more than do others to the old symbolisms, but they are investing them with a new and richer meaning. With Everett Dean Martin, the philosopher of Cooper Union, New York, I doubt if the masses of men can ever live without symbolisms and illusions. But to these new men the old illusions and dogmas which create nothing but hate are unknown. Many of these and hundreds and thousands of scientists and scientific philosophers seldom, if ever, speak at all of religion.

But, nevertheless, they lead lofty religious lives. To the scientist religion is the whole effort of his life to come into rational relationship with the universe in order that he may control its powers and free his life to a greater effectiveness. And whether he calls these powers of the universe God, or evolution, or the Christ spirit, or the *Zeitgeist*, or finds life to be a mere mechanical process, all this matters little. His mind and heart are free and unafraid. He does not know what lies beyond his scientific data any better than does the dogmatist and for that very reason, unlike the dogmatist, he does not dogmatize about it and burn men and women and little children because they do not imagine what he imagines lies beyond.

The scientist knows that the forces within his ken are friendly forces and that he is a part of them. He believes that those which lie beyond his ken are also friendly and that the universe is of one piece and, therefore, he is likewise a part of the things he does not know. Just to live in friendly intercourse with these forces and magnetize his life with them—this is his religion.

Touching upon these phases of modern thought and the religious significance of science, an old college friend of mine writes me that science seems to assume that it has found the goal of humanity and the solution of life. Some scientists in a moment of enthusiasm over some marvelous discovery may have said so, but science as such holds no such assumption. My friend asks why Shakespeare is a greater poet than Goethe, and answers: "Precisely because he does not try to philosophize life, but leaves it as he found it, an insoluble mystery."

"You remember," he continues, "the words of the old Saxon chief when the missionaries first appeared in Britain—

how life is like a sparrow which suddenly flies in out of the darkness, lingers an instant in the light and warmth, and then disappears into the darkness; and this has always been the true Anglo-Saxon attitude when we have not tried to impose an alien and Semitic religion upon it. Science may explain all mysteries except the ultimate one—the meaning and purpose of life; but that it will never solve; and it behooves us to be modest and not to assume an attitude that implies the possibility of a solution. And as long as life is darkened by this uncertainty as to its ultimate goal all attempts at an amelioration of the conditions of life can arouse but a qualified enthusiasm."

Profound, beautiful, and penetrating!

His pessimism is passionate and valiant and has the distinct merit of being honest, robust, and stimulating. I recommend it to some of my ultra-mechanistic friends who believe that life is a chemical formula —a little longer, perhaps, than diethylamidosulphobetanaptholbenzoate, but a formula of the same type—and that experience, whether æsthetic, religious, or intellectual, is merely the summation of mathematical data of which we shall ultimately be able to write the equation. But even should the mechanist turn out to be correct, I do not believe it would destroy the possibility of a lofty religious life of service and beauty for men.

But I do not agree with my friend that science assumes to have lead us to reality or to have given us the solution of life in any definitive terms. The scientist does not know what life is nor why life is nor whither it is going. At this point mystic and mechanist, materialist and spiritualist, dogmatist and pragmatist are all in the same boat. Each one has faiths, hopes, intimations, but that is all. And out of these faiths, hopes, and intimations he must somehow manage to live. But the scientist does not attempt to erect them into dogmas and creeds and to persecute other men who do not accept them. He tries to persuade men to his viewpoint; he argues for its truth with all his energy; but the moment he finds he is wrong, as Huxley said, "all the authority in the world is as nothing and the traditions of a thousand years sound like the mere hearsay of yesterday." His very errors teach him.

But I think we cannot say that science will *never* solve the problem of life, because we do not know what science may yet reveal. The prime thing is that the scientist, instead of looking to the past for his religion and his revelations of God, is always looking to the future and is prepared to follow wherever his intelligence may lead. And my claim here is that this new and open universe and this new and open life which science is daily offering men are filled with exalting, exciting, and wholesome new religious values by which and for which to live.

III

FOR, after all, what is religion and what is science? These are idle questions of course and it is in a sense dogmatic to seek to define them in a word or, indeed, to define them at all. However, in science the *measurement* of such a thing as electricity or intelligence is *its definition*.

The critics of intelligence tests assure us that we cannot measure intelligence until we have defined it. This is indeed a naïve view of what science is. Science is measurement and measurement is definition. And "everything that exists can be measured." If a thing has existence it can—with time and proper technique—be measured in some other form or statement of existence. I have little doubt that religious emotion in time will be measured. It is only then that we can define it in any exact sense. But for present purposes the living of religion is its definition —the only way we have of knowing what it is or what it does. I cannot define love in any ordinary terms to a man who has never felt it, nor ideals to a man who has never created any of his own.

Yet the mind is always seeking for working descriptions, and I think that in "The Dance of Life" Havelock Ellis has given us a working description of both religion and science. And I agree with him that in their final analysis each of them is

an art—simply different aspects of the one great art, the art of life.

Religion, as I understand Ellis to say, "is the joyful organization of an emotional relationship to the world conceived as a whole," and science is "the organization of an intellectual relationship to the world we live in adequate to give us some degree of power over that world." And defined in this way there is and can be, as he says, no antagonism between religion and science in the great art of life.

If we accept these descriptions for the moment, the attitude of science toward religion becomes self-evident. For when men knew nothing of nature (that is, had not science), their emotional attitude toward the universe was almost wholly that of fear. And this attitude was reflected in their culture, in their ethics, in their economics, and in their politics. Men sought to win the universe—which is another way of saying their conception of God—to friendliness by pleadings, sacrifices, and mystical rites.

But when science entered with both its instruments of discovery and its attitude of mind and spirit, the whole emphasis of the religious life was changed. At least it was changed for those who learned not only to use the instruments and products of science, as all men did, but also the much more significant thing, namely, the methods of thinking and the type of life which constitute the essence of science.

These men brought a new technology of religion into the world. They sought to win the universe—that is, *their* conception of God—to friendliness by discovering its laws and learning how to coöperate with them. Without science men have lived exalted lives, but their religion has been an effort to placate God. But with science religion is an effort to become a co-worker with God. This change means not only new religious values and objectives and new modes of worship but also new conceptions of righteousness. And these conceptions of right living have to be embodied in moral codes of various forms and various degrees of definition if they are to be practicable for daily use throughout our great modern societies.

This and this alone is the *raison d'être* for any effort to state even the barest outline of the religion of a scientist. It is meant to be and is, of course, only the merest suggestion. My hope is, however, that it may for some people point the way to a more "joyful organization of an emotional relationship to the world conceived as a whole," which Ellis, I think rightly, says is religion, but made much more joyful and fruitful *because* it is organized in the light of this new "intellectual relationship to the world we live in," which is science.

IV

THE reconciliation of science and religion is thus seen to be the arrival of both the head and the heart of humanity at a point of view and a point of emotion where both science and religion are seen and felt to be merely different aspects of life conceived of as an art. *And, if we learn to look upon life as an art and learn to live it as an art, it requires no other explanation.* It becomes an end in itself and for itself. And since we never had science before, it seems to me science offers the possibility of just such a new orientation of both mind and heart toward the universe, toward God, toward humanity—in short, a new religious, ethical, æsthetic, economic, and political evaluation of life itself. Science does not solve or pretend to solve the problem of life. But it does give life new significance, new responsibilities, new delights, and, I believe, new hopes. My friend finds in it only a new despair. It was the fear that such a despair might settle upon men's minds as the outcome of science that I wrote the concluding chapters of "The New Decalogue of Science" and tried to show that science throws or could be made to throw a warmer spiritual light upon the human pathway.

For what Ellis, I believe, does not attempt to show, is that the deeper and clearer man's intellectual orientation in the universe becomes, that is, the more clearly he understands the mechanical operation of his world and the more he is able to lay his hands literally upon its

forces and bend them to friendly intercourse and service, then the deeper and finer will become his emotional, that is his religious, æsthetic, and ethical orientation among its enhanced and multiplied values.

True, the bird flies in from the darkness and feels the warmth and light; but how much richer would be the emotional values it gained from the experience if it understood the fires and the light, the human beings it saw, and the music it heard! It does not take away from, but rather adds to, the mystery and lure of religion if we know the chemistry of the fires upon the altar. The difference between our life, with its vast new content of science, and that of the ancient mystic is just the note that Tennyson struck when he said—

> Better fifty years of Europe [with its intellectual understanding of the universe] than a cycle of Cathay [with its resignation to Nirvana].

The mystic believes he can arrive at an understanding of the universe by intensive contemplation. But the contemplation of a brick for a thousand years will not give us half as much knowledge as breaking it open with a hammer and looking inside. And if we go further and put it into acids and under X-rays we learn still more. True, we may learn no more about reality, but we do learn more about bricks. And for the purpose of making life a greater and finer art and an adventure filled with meaning, a scientific knowledge of either bricks or electrons is an immense gain. Our marvelous discoveries in anatomy and physiology do not reveal the nature of life, but they do reveal many of its processes. And the power to manipulate these processes gives us vastly more power to bring health and happiness, that is, more of life and finer life into the world.

And the scientifically educated man is not lacking in mysticism or in a sense of mystical values just because he has to some extent explored the physical universe. The primrose by the river's brim is in fact far more a primrose to him than it can possibly be either to the unlettered man or to the mystical poet, for the reason that he understands more of its physiology and biology—if you please, more of its soul. The whole world of the scientist is a world of greater æsthetic and religious values than it can be either to the common man or to the contemplative mystic.

How impossible it is, for instance, for the man of to-day trained in science to recall the mystical religious life of the Middle Ages, with its dogmatic, theological Christianity, its ready-made spiritual life, its goose-step formalism, its ban of hell against intellectual adventure! We cannot even picture it in our imaginations unless it be as in the florid prose of Froude, "in the tones of some distant church bell, strange creation of a mediæval age, which falls upon the ear like the echo of a vanished world."

That whole world *has* vanished, its life, its meanings, its objectives. Millions of people still live in that mediæval world, of course, while they are using the instruments and products of science. But to the educated man it is gone. And the question is, has the spiritual life of man gone with it? I think not. It has, through science, immensely gained. Your father and mine opened the Bible and took the first passage their eyes lit upon as the guide to their conduct and the final arbiter of their practical enterprises. But you and I consult the weather map and the financial and political columns of the newspaper. Is the Bible for us any less a book of religious and spiritual values? I think not.

V

BUT my objection to mysticism as a solution of life is first, its *laissez-faire* character, and second, that to it one universe is as good as another. Evidence—the evidence of science—to it has no value. Its pictures of the universe may be true, but there is no logical evidence for them. And certainly my friend could not claim that men do not need some kind of orientation toward the physical universe of common sense. It may not be the real universe; few scientists believe that it is. But it is certainly a part of its manifesta-

tions. And surely the scientists can say with Kant, "If nothing is, nothing would appear."

True science deals merely in appearances; but our knowledge of these appearances, their ways of behavior which we call laws, has given us enormous power not only to manage life better, but also to guide it to better and richer goals. And just because the ultimate goal is darkened by mystery is not only no reason for failure to seek to ameliorate the conditions of life but is also one of the chief reasons why we should seek to ameliorate those conditions. Just because we do not know what may lie ahead, "what dreams may come when we have shuffled off this mortal coil," is the most pressing reason why we should make this present dream of life as grand, as fruitful and beautiful as possible.

My friend believes we should not try to improve the conditions of life because we do not know what life means or what it may ultimately come to. The mystic believes we should not try to improve this world because there is another coming where conditions will be ameliorated without our efforts. The suffering, starving, filthy millions of India and China are ample witnesses to the practical workings of these doctrines. But the scientist, while he knows no more than either about what lies ahead, believes that *now* is the best chance he will ever have, possibly the only chance, to learn to live. He believes —and this belief is the great informing passion of his religion—that now is the time to make this world livable, clean, and decent, to adjust its social forces, reduce its evils, and bring gaiety and health and sunshine and hope and freedom into the every-day lives of common people. And no one can deny that science has placed in our power at least the possibility of making life happy, fruitful, significant, and adventurous for more people than has ever before been possible in the world's history. And to bring this rich fruition to common men and women in larger spiritual meanings for their lives—this to the present-day scientist is certainly religion enough.

VI

FOR the truth is that it is not so much among men of science that we need this new orientation of religious values in the light of our new natural knowledge, but primarily among men and women and children who use the inventions of science but have not accepted or understood the universe which science has opened before our minds. And I think the chief reason why so many young people are emotionally, religiously, and ethically so at sea is because they are intellectually at sea. They have not accepted the new universe because they have not been made to understand it. And it is not their own fault. It is because scientific education has not yet waked up to the immense *religious* call upon it. Think of it: it was only two years ago—in 1923—that the American Association of College Professors appointed a committee to devise ways and means for teaching the spirit and methods of science to college students! The enormous significance of this fact has escaped the attention of the liberals and conservatives who have been on the one hand calling the young people of our time to a more liberal religion and on the other calling them "back to fundamentals." The bewildered youth, as well as an enormous number of intelligent adults, have not had sufficient grounding in the method, spirit, history, philosophy, and spiritual significance of science to go forward to a new synthesis, nor have they felt sufficient confidence entirely to let go of the old faiths.

We have been teaching science to our children for two generations: teaching them, for instance, chemistry and physics, teaching them mechanics and astronomy, without teaching them the spirit, the attitude, the kind of life, the exalting excitements, the spiritual insights which constitute the inner essence of science. We have failed completely to show them the moral responsibilities and religious significance of that life by the living of which the things of science were discovered.

For the things science has discovered

are as nothing compared with the spirit and the kind of life it has brought into the world. The spirit of science is worth vastly more than the discoveries of science. And we have made almost no effort to bring its spirit to anybody. Blazing, blaring, booming from every housetop are advertisements of the products of science—but no mention of its gentleness, its tolerance, its gaiety, its beauty, its ethical opportunities, its religious possibilities, its new and intelligible conceptions of God. No wonder that our youth are both morally and religiously at sea!

Science, as Everett Dean Martin has shown, is the lineal intellectual descendant of the Renaissance. Indeed, it is the intellectual child of the Greek spirit and every spirit of the past when men looked freely and fearlessly into the problem of life. Science could never have been born in the Middle Ages, when life was given to men ready-to-wear in dogmas and creeds—a time when men lost all curiosity about the universe in which they lived and all desire to ameliorate its conditions, and when they concentrated their minds upon another world which they hoped to find ready-made when they left this one. For curiosity about this world is the soul of science, and when it is lost it always means dark ages of misery for the lives of men.

The business of science is to liberalize men once more—to free the human spirit, free it to new values and meanings in this present life, and to apply social and political methods that will bring these values and meanings to common men. For the great tragedy of the Renaissance was that common men knew nothing about it. They could not because it was conducted in Latin and Greek. The Renaissance men spoke a language the masses could not understand. And because the Renaissance men did not take the common men into their confidence, did not inform them of the great secrets of life which the resurrection of the Greek spirit had brought to them, the masses fell an easy prey to Savonarola—the prototype of the great outstanding Fundamentalist figure of our day—and followed his leadership in the destruction of all the fineness and beauty of that happiest of human springtimes.

Can we avoid these old heartbreaking tragedies? I don't know—I don't know. I think we can. I think we can if we see clearly that we are conducting another Renaissance in a language which common men do not understand but which they could understand and gladly enter into, if the scientist would but take the trouble to teach them its secrets, share with them his inspirations, bring them his kind of life, and teach them how to live it; show them what values, what religious depths, what moral heights, what social, economic, political happiness and efficiency this spirit and kind of life offer, not for a few but for earnest men everywhere.

The everyday, unlettered man on the street must be taught, and I think, if taken when a child, can be taught, to go to a new social, political, and religious school and to trust new and wiser masters. He would thus unconsciously liberalize his own party, his own class, and school them in a new technique of life, give them new things to live for, the outcome of which would be to bless all civilization with new ideals toward which it might well strive.

And if college students know well-nigh nothing because they have been taught well-nigh nothing of the creative spiritual life of science, what must be the spiritual and intellectual situation of high school students and children in the grades? Even now no text book is available on scientific method—the methods by which science is created and is advanced! Two or three are in the press. Is it any wonder, then, that we are in an age of spiritual bewildernemt, an age when a few unique and wonderful minds have created a mechanized world, where everybody uses science and its machinery but where no effort has been made to teach men what it all means and what it could mean in the way of richer religious, spiritual, and ethical values and objectives for which and by which to live?

VII

FOR never in all history did men have so much to live for, never did they have so much to live in, never did they have so much to live with—and yet, never did they seem to have so little to live by. We live in a world to-day where the very air is quivering with human speech, where the skies are actually vibrating with music and song, where every thought we think "goes shivering to the stars." Literally and actually the time has come when "deep calleth unto deep" and when "day unto day uttereth speech and night unto night showeth knowledge."

And yet, with the winds of heaven laden with music and knowledge, never did men's lives seem so barren of true intellectual exaltation nor their hearts so far from authentic spiritual anchorage. People are flocking by the millions to bearded mystics, enshrouded occultists, bob-haired and rouged clairvoyants, dark-room mediums, Oriental voodooists, "applied psychologists," character analysts, pseudo-psycho-analyzers, hocus-pocus humbuggers, and in-tune-with-the-infinite bunk-shooters, and are trying to get God out of ouija boards.

As an instance of this a writer in the June issue of the *Scientific Monthly* states that one fourth of all the citizens of Los Angeles, California, belong in these classes and, while highly educated in one sense, they belong to societies strongly banded together and supplied with large sums of money to fight the spread of scientific truth. Los Angeles is probably no special rendezvous of humbuggery. And yet this writer further points out that, with all the countless millions of wealth which science has made possible to this section, there is not a single laboratory in all Southern California devoted to the study of experimental medicine. And this is the one field that requires a greater range of equipment than any other field of scientific research and also the one which is most directly and immediately beneficial to the people. California, like all modern states, of course, has made its fortunes almost wholly out of science, but understands so little of the spirit and method of science that this writer exclaims:

> Look at the Governor of California refusing to endorse modern hygienic measures for fear of alienating the Christian Science vote, and the regents of the state university denying adequate appropriations to the medical department for fear of antagonizing the Protestant religio-therapeutic bloc!

Now, I wonder, even if, as my friend suggests, science does not "explain the ultimate goal of life," would not its spirit and method, taught to these well-meaning people in childhood, have given them a deeper, happier religious life, nobler religious and moral objectives, a truer universe to live in—in fact, a truer solution of life itself? For the problem of life is not soluble, but life itself is soluble, must be solved in the values that it attains. Would not a knowledge of this natural world and the power of becoming a practical co-worker with all its friendly forces and the communion with them which science offers, give larger values (that is, a deeper and truer solution) to the commonest life?

Yet since, so far, the spirit of science is not given to men but only its instruments and products, we see everything from pink pills to spirit photographs being sought in order to give men that noble calm and that inner assurance which the faiths of our fathers, whether right or wrong, gave them with which to face the facts of life and to meet the mystery of death.

And, finally, would these new faiths and works of science do away with the old mystical life of man? No, they will only enrich it. The old mystical life of man cannot be done away with. We hear that science will destroy men's religion. You cannot destroy men's religion unless you destroy men's natures. For man is "incurably religious." As Plato said, "whether a man wants to be a philosopher or does not want to be a philosopher, he has to be a philosopher." And whether a man wants to be religious or does not want to be religious, he has to be religious, because the universe—its mysteries,

its allurements, its beckonings—will never let him alone.

What the exiled Spanish philosopher, Unamuno, calls "man's homesickness for eternity" will always remain. That infinity which Victor Hugo said every man carries within him he will always carry within him. And there will always be that same immortal longing for this infinity within to touch and to commune with the greater infinity without. This to the scientist is religion. And what science has done is to enlarge enormously both the infinity within man and the infinity without. It has thus given him for a religion of fear a religion of courage; for a religion of forbidding mystery a religion of mysterious and alluring light; for a religion of vengeance a religion of tenderness, of tolerance, of sweetness and freedom; a religion, the objective of which is the understanding of nature and human nature. This, and this alone, is the understanding and the service of God.

And unless some such religion does lay its hold deep upon the daily lives of men, unless this new sort of political and religious liberalism shall annoint all parties to the social conflict, unless this new religious life shall humanize industry, economics, and politics, and shall become the living gospel of the nations, then, so far as I can see, the only thing left for the bravest and most hopeful man is to exclaim, "After us, the Deluge!"

VIII

BUT even should the Deluge come—and it will come unless science and the new liberalism can dam back its massive flood—we have at least lived to see that science offers men a religion as filled with mystical beauty as any which men have ever imagined, but also with two definite new objectives and the technique for bringing them to pass: first, an amelioration of the conditions of life greater than was the ancient's dream of paradise; and second, the actual creation, through the new chemistry and biology, of greater and better human beings, a race endowed with higher and more effective organic capacities for happiness and achievement than are we ourselves—the thing we know now as eugenics. Can religion have any higher objective than that of the creation of a future race of men healthier, saner, more virtuous and intelligent in their inborn capacities than are we?

And we have at least lived to see the kind of society science might have given us and the sort of world, both religious and spiritual and also social and political, which men might have made out of science for themselves here on earth.

For truly—elaborating very greatly from a boyhood memory a passage written originally I think by Charles G. Wescott, then Bishop of Durham—what we of all faiths, of all parties, of all creeds look for, hope for, and pray for, is a society where class shall be bound to class by the fullest participation of the lowest man and the highest man in the great treasure of the one common life—the common life of wealth and pleasure, the common life of education and opportunity, the common life of adventure and beauty; a society where the members of each group of workers shall be so perfectly adjusted by psychological, temperamental, and physical measurements, by social, industrial, and political technique, that they will find in their work the development of their character and the consecration of their powers; a society where the highest ambitions of men shall be to become leaders in their own class, each using his own special powers without waste and fellowing the common traditions on to noble issues; a society where the biological birthright of every child shall be health, intelligence, and beauty, and where every economic, educational, and political agency shall minister to this child's happiest individual and social fruition; a society where every man shall know and be stimulated by the knowledge that he labors not for himself alone, nor for his family alone, nor for his country alone, but where every man shall labor amid the free air of hope and opportunity, for civilization, for progress, for a better human race, and for ever finer, richer, and truer conceptions of liberty, beauty, and God.

Knud Rasmussen's Arctic Odyssey

The First of Two Articles by the Leader of the Fifth Thule Expedition

I WAS born in north Greenland, and lived the whole of my childhood among the Eskimos. I remember when the American explorer Greely passed by our coasts on his ill-fated expedition. And Robert E. Peary, the discoverer of the North Pole, came up to our parts, and made his first trip across the inland ice in the neighborhood of Jakobshavn, where I lived as a child. It is not strange then, that it should have been my boyish ideal to become an arctic explorer. I had, moreover, an advantage compared with others, in that the Eskimo language came as naturally to me as my mother tongue.

After studying for some years in Copenhagen, I made my first journey in 1900. This was to Lapland, for the purpose of studying reindeer breeding. Since then journeys have followed one after another. I took part in the Literary Greenland Expedition under the leadership of Mylius-Erichsen, in the course of which we passed Melville Bay and wintered at Cape York. Here I devoted myself to the study of the Eskimos in particular, and all my subsequent journeys were made chiefly for this purpose. In 1905, a small journey to south Greenland. In 1906-08, a longer one, for the purpose of collecting folk tales. In 1912–13, my First Thule Expedition, crossing the inland ice to Independence Fjord. In 1917, the Second Thule Expedition, with the north coast of Greenland as our objective. In 1919, the Third Thule Expedition, to establish points of support for Roald Amundsen in Grant Land; and, in the same year, the Fourth Thule Expedition, to Angmagsalik on the east coast of Greenland, for the purpose of collecting folk tales.

As a natural item in the course of my studies of the Eskimos, I made the Fifth Thule Expedition, which, in the course of a single journey, brought me into touch with all the Eskimo tribes from Greenland to Siberia. Unfortunately, political considerations prevented me from continuing my studies in Siberian territory.

THE Eskimos may be estimated to number in all about 40,000. Of these 14,000 live in Greenland, the remaining tribes being scattered about over the north coast of America and the eastern part of Siberia.

The Danish work of colonization in Greenland dates back a full two hundred years, and it was therefore natural that Denmark should take up the problems which the Fifth Thule Expedition has endeavored to solve. That we owe a great deal to explorers of other nationalities need hardly be said. It will suffice to mention such names as Nelson, Murray, Turner, Stefansson, and Jennes. But the Fifth Thule Expedition was the first to succeed in visiting all the Eskimo tribes. The objects of the expeditions were as follows: To investigate the origins of Eskimo culture, and make ethnographical collections and archæological excavations and researches. Also, collections of material for a description of the Eskimos past and present, in writing down their folklore, traditions, and religious customs. And finally, the study of their technical culture as shown in their daily life.

The members of the expedition were Peter Freuchen, cartographer and naturalist; Dr. Therkel Mathiassen, archæologist and ethnographer; Dr. Kaj Birket-Smith, geographer and ethnographer; Leo Hansen, motion picture photographer;

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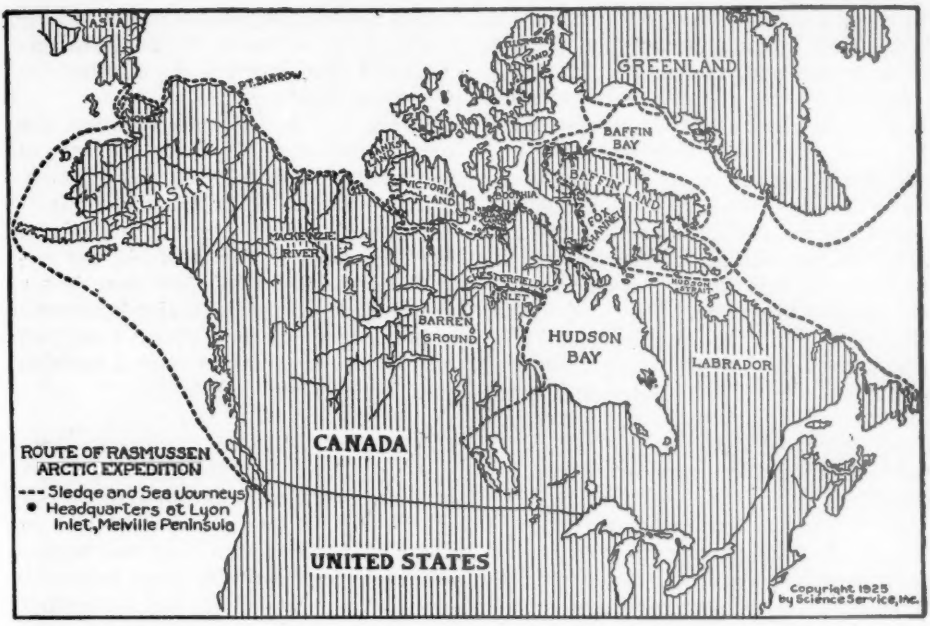


On his Fifth Thule Expedition, which lasted nearly three and a half years, Rasmussen covered about 20,000 miles and visited all the Eskimo tribes from Greenland to Siberia, making a veritable Odyssey of the northlands.

Helge Bangsted, scientific assistant; and seven Eskimos from north Greenland.

During the first year of the expedition, we made our headquarters on a little island, called Danish Island. All the material for the expedition was brought to the spot by our vessel *Skongen*, Captain Peder M. Pedersen. In the following year we divided into five parties. Peter Freuchen was to set out by dog sledge and follow up the old migration routes of the Eskimos from Hudson Bay to Greenland. Therkel Mathiassen took the route via Hudson Bay—Baffin Land and Labrador; Kaj Birket-Smith, the country inland from Chesterfield Inlet and out via Winnipeg, to get into touch with Eskimos and Indians; while Helge Bangsted took the district west of Hudson Bay. Finally, my own party was to cover the whole range—Canada, Alaska, Siberia.

Peter Freuchen and Therkel Mathiassen made a renewed cartographical survey of the whole east coast of Melville Peninsula and Cockburn Land, the northwestern part of Baffin Land, with the fjords of Admiralty Inlet, Pond's Inlet, and two large fjord systems on the hitherto unknown coast west of Fury and Hecla Strait. Furthermore, Mathiassen charted great parts of Southampton Island, and Freuchen the west coast of Roes Welcome down to Chesterfield Inlet.

The main point of our archæological researches lies in the excavations made by Therkel Mathiassen at Repulse Bay, Pond's Inlet, in Baffin Land and Southampton Island. Further supplementary excavations were made by the other members of the expedition, Peter Freuchen at Chesterfield, Kaj Birket-Smith at Sentry Island, Helge Bangsted at Vansittart Island, and myself in King William Land.

The investigations show that the culture of these regions in early times was not a little different from the present. In our day, the Eskimos are obliged to live to a great extent by reindeer hunting. In the old days they lived mainly on marine animals. Numerous details show a remarkable likeness to the culture of Greenland and north Alaska. This ancient culture we have called the Thule

type, as the first finds representing it were made by members of the Second Thule Expedition, 1916-18.

Among all the investigations touching the Central Eskimos of the present day, the most important were those dealing with the people west of Hudson Bay. These Eskimos live their lives independently of the sea, and there is nothing either in their material or in their spiritual culture to suggest former connection with the coast at any time. Their culture is altogether the most primitive Eskimo type known, and all the information we have been able to procure points to the conclusion that we have here a remainder of the aboriginal Eskimos; that is to say, that the Eskimo culture originated in America.

Our collections comprise some 20,000 objects, of which 15,000 are ethnographical and archæological items. Many of the collections are from tribes not represented in any previous collections.

The expedition lasted nearly three and a half years. In the course of that time I covered about 20,000 miles in a primitive fashion, by dog sledge, kayak, or canoe. This, of course, does not represent the direct distance from starting point to finish, but includes all hunting expeditions on the way.

The actual distances would not count for much if it were not for two factors that have to be reckoned with. In the first place, it is nearly always windy, and the wind as a rule in the northwest; that is to say, I had nearly always to drive against the snow and often in very severe cold. This incessant traveling called for the greatest effort of will. Secondly, wherever I went, I found such an overwhelming mass of material that it seemed impossible to deal with it all. So that actually I got more rest when working with the sledges on a journey than I ever could during our halts at the various settlements.

Traveling in unknown regions and for indefinite periods never caused us any real difficulty. I was able, for instance, to make the entire journey from Hudson Bay to Alaska with the same team of dogs. I shall not touch upon hardships and obstacles; to do so would, indeed, be merely to repeat the experiences of other explorers in those regions.

As far as I myself am concerned, the real adventure dates from the 4th of December, 1921, a cold winter's morning, when, on the sea ice of Haviland Bay, I encountered the new people, and found that they spoke Eskimo just as I did myself. For I knew then that there was a possibility of learning to understand these people, strange as they were. I realized that I had indeed come upon something new.

ONE day when I was lying in Pelly Bay, east of the Boothia Felix Isthmus, two men came running up out of the blizzard and suddenly stood in front of our snow hut. They had neither sledge nor dogs, only big snow knives in their hands. And this was altogether abnormal, for their dress showed that they had come from somewhere far off.

They crept in and thawed out in our hut, and after we had fed them substantially, their tongues were loosened. They were two brothers from the Magnetic Pole, out with a load of fox skins which they wanted to sell, for a couple of old guns, to the people at Pelly Bay, who again had trading connections with Repulse Bay, farther to the south. The younger of the two brothers was to continue the journey, while the elder, whose name was Qaqortingneq ["The White One"], was to return home at once, and had, therefore, left his two wives and foster son for the time being a little way out from our camp.

It was at once decided that we should go back with Qaqortingneq to his country, and that the women should be brought in to our snow house as quickly as possible. A couple of hours later, the entire family was assembled, and the women proved to be both young and pretty. Qaqortingneq evidently wished to make a good impression on us at once, at the same time emphasizing the value of his wives as womenfolk. Consequently, as soon as we asked their names,

Rasmussen marking the tomb of the ill-fated members of the Franklin Expedition at Starvation Cove.

he took the opportunity of giving some additional information.

"This is Qnertilik [filmy-eyed], the costliest of my wives," he explained. "I paid for her with a sledge made of wood."

We were all greatly impressed with this unheard of price, knowing as we did that sledges were ordinarily made of more perishable material. The usual process is to take frozen musk-ox skins and soak them, then lay them double with a padding of reindeer meat or salmon in between. A sledge of this sort lasts only till the first thaw, when it is eaten with great gusto, the "stuffing" by men, the skin by the dogs. But a sledge actually hewn out of driftwood might last a lifetime. Qaqortingneq had achieved his purpose; we no longer thought of his wife's beauty, but only of her value.

The other one, Qungak ["The Smile"], who was somewhat older, had been purchased for a piece of lead and an old file, but Qaqortingneq considerately added that he had bought her under specially favorable conditions, her husband having just died of hunger and left her helpless for want of a protector.

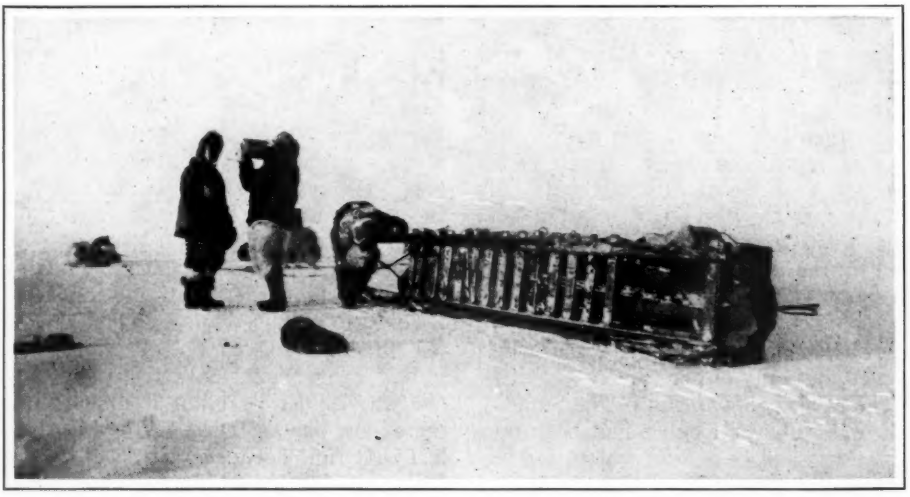
The foster-son was next introduced. His name was Angutigsugsuk ["Manny"], a young man with a modest smile. Qaqortingneq explained that he had been born one of twins and taken over at birth for a consideration. Ordinarily when twins are born, one is killed at once. And in the present instance, it was a highly speculative transaction to give a whole kayak and a cooking pot for this one. The only possible justification was the view that men ought always to command a higher price than women.

The deal with the fox skins was settled in the course of the night, and for a few beads we managed to procure a blue fox for our zoölogical collection. We struck camp next morning, and made our way across Franklin Isthmus, forcing a slow passage through the big river bed that runs between Pelly Bay on the east and Shepherd Bay on the west. Our objective was a camp of snow huts inhabited by some Netsilik natives who

Arctic sunset over the sea. Nowhere in the world can one find a sunset surpassing in beauty those seen on a summer's day in the Arctic. It is a scene viewed by few mortals.

lived on the ice between King William Land and Franklin Isthmus.

At last, on the evening of the 5th of May, our dogs got scent of something, and Qaqortingneq insisted that they must be pulled up at once. Then, turning forward himself, he discovered, on the ice ahead, a long line of seal skulls, laid out with the snouts pointing in a particular direction. He told us to drive well out away from these skulls, and when we had passed them, he explained that people thereabouts believe that the soul resides in the head and that the soul is supposed to possess eternal life, which is transferred from one body to another when it is killed, so that a man may often kill the same seal many times over. There-



Several times a day a new layer of ice must be laid on under the peat-shod sledges. The coat of ice must be very thin, and with a big heavy load it is soon worn through. The water, which is spread on with a small piece of bearskin, must first be warmed a little in the mouth of the driver.

An impressive scene from Dolphin and Union Strait, Northwest Passage. It is one of the great events of the year when the sun first shows above the horizon after the long winter night.

fore, on moving from an old camp to a new one, it is the custom to lay out the skulls in such a manner that the snouts point toward the new hunting ground. The seal will then follow from place to place, and there will be no shortage of meat.

In the present instance, our friends' peculiar system of practical zoölogy served as a compass showing us the direction we must take to find them.

After a couple of hours' driving, we came upon the first shelter walls of the new hunting camp. A few tracks were discernible at first, and then a whole confusion of them. Seeing that the hunter has in each case to move out from the camp and then back again, we had to

A snow hut camp near the Northwest Passage. Here in the midst of snow and ice man and beast keep warm with fire and furs. The huskies sleep in the snow, oblivious to flurries and blizzards which frequentlly bury them under blankets of white during the night.

At Akutan, in south Alaska, there is a regular system of hunting the fin whale in spring and summer. The animals are killed with dynamite charges, and then towed into a dock, from which they are hauled up by machinery, to be cut up and boiled down.

seek our way to the camp itself by following the furrow left in the snow by a seal when dragged home by the hunter. And in such a blizzard as this it was no easy matter, even for Qaqortingneq himself. But we declined to give up, and tacked about from one set of tracks to another, like ships manœuvering in a storm. Our dogs became more and more bewildered by this apparently aimless changing of our course, until about eleven o'clock they got wind of the camp themselves and kept the scent a whole hour. Finally, about midnight, we drove right into the white village, where all were fast asleep. And with terrified howls the mongrels of the camp fled before this invasion of heavily laden sledges.

Outside the village great blocks of snow had been set up, not as a protective wall, but as a drying frame for seal skins. The people of Kuggupanga ["The River Mouth"] have evidently no need of walls, but in front of the entrances to the huts one sees great sharp-pointed harpoons and hunting implements thrust down into the snow, while long snow knives are set in the walls just above the doors. These are to keep away evil spirits. Despite the primitive character of the place, one gets the impression of an organized society. It is easy to see, however, that white men's gear is a rarity in the country; we know, at least, that no white man has been here since Amundsen visited the place twenty years ago, and that those of the natives who did not meet him then are entirely unacquainted with our race. This applies to the whole of the younger generation, about twenty-five years old or thereabouts. It is, therefore, but natural that I should be a little anxious as to our reception.

The great thing now was to arouse as many of the houses as we could at once, for the more men we could drag out from their night's rest, the more we should have to help us build a hut. Angutigsugsuk and I therefore crept into one of the nearest huts, where his mother and stepfather lived.

"Here are white men come to visit us," he cried excitedly.

But the inmates appeared to be sleeping the sleep of the just, for the cries had to be repeated before their snores gave place to shouts. The mother jumped up from a bundle of dirty skins, her own greasy locks full of caribou hairs, kneeled down on the platform and bared her breast, which Angutigsugsuk hastened to kiss. This is a son's greeting to his

The Eskimos of the Northwest Passage formerly killed polar bears in close combat with knives, and were slow to begin use of other weapons. Dogs were used, the chase frequently running into many miles. But these bears are mere cubs.

mother on returning from a journey. And the mutual recognition of the bond between them, the boy doing homage to the breast that nursed him, is profoundly touching despite the squalid surroundings.

I have got pretty well accustomed to filth and disorder among natives in the many years I have known them, but this house made me open my eyes. Over by the side platform, close to the sleeping skins, lies a pile of seal meat and blubber, that seems reflected in the grease-polished faces of the inmates. The lamp, which, despite the abundance of blubber, had gone out, is now relit, and I am able to see the naked bodies properly. They are not merely dirty, but positively encrusted, and the hair, which is cut short, is smeared thickly with oil.

At first glance, it looked as if the ears, the forehead, the roots of the hair, and the neck were covered with sores, but this too proves to be merely accumulations of dirt. I have to make friends with my host, however, and we smile all round, as amiably as could be wished.

After I have been talking to them for some time, they inquire where the white man is, and when I explain that I am he, they find it hard to believe. A little lad, the amulet boy Tutaq, has to be wakened out of his infant sleep to see "a man such as he has never seen before." Then, while some seal meat is being boiled over the lamp, we go out to unload our sledges. And I am just in time to see the manner in which Nalungiaq ["The Infant"] receives her daughter, Qnertilik.

In the teeth of a howling blizzard, she tears open her clothing so as to bare her breast, and little Qnertilik salutes her mother's bosom with a long and affectionate kiss.

The whole village is now awake, and all the women troop up in a procession to the sledges. To my astonishment, they move round in single file, with such a solemn expression of countenance that I am at a loss to understand what it means. Steadily, without uttering a word, they pace round, one after the other, making a circle round all the sledges and all the dogs. Then in a moment the solemnity is gone, and they mingle informally with the rest, doing their best to make us welcome.

But what did it all mean? I cannot help asking, though I know well enough it is not wise to ask too many questions regarding religious ceremonies. The answer is a strange one, and shows, in

Before the Eskimos learned new ways from the white men, their hunting at sea was carried out in *umiaks*, the Eskimo skin boats, or in kayaks. Nearly everywhere in Alaska the kayak is now superseded by small punts, from which the natives can hunt seal and sea birds.

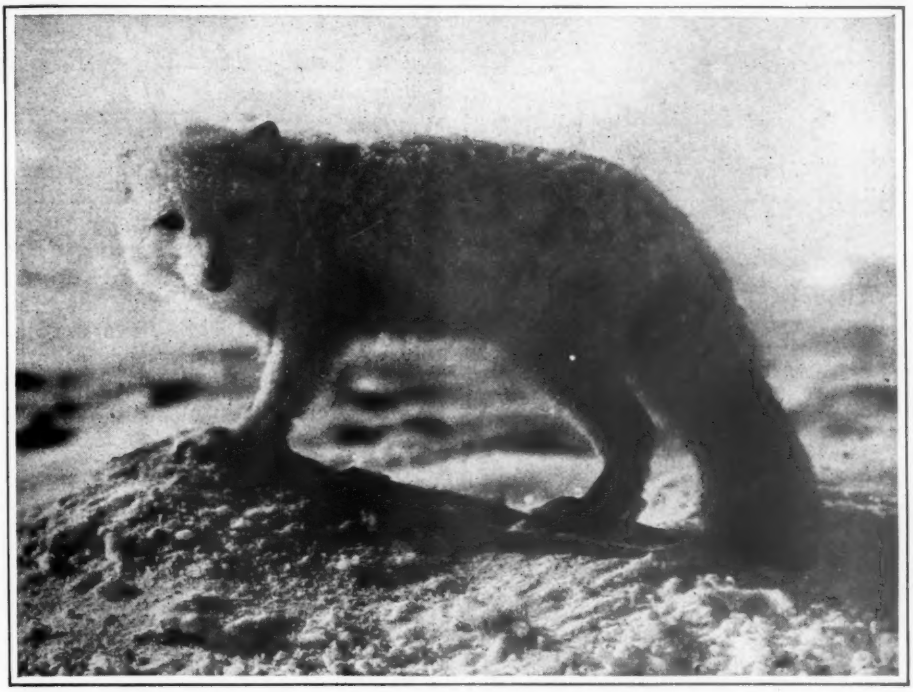
all its simplicity, how carefully these people seek to guard against mysterious perils.

Any stranger coming from a distance cuts a track into the camp he enters. This sledge track, surrounded by the tracks of men and dogs, is regarded as a trail of good and evil. Human beings must not be content with what they can see; the air is full of spirits, and some of these may secretly have joined our party. It is therefore, essential that all the women who have borne children should cut a circle round the sledges and dogs, for the spirits will then remain within that circle of tracks and lose their way to the camp itself.

After this ceremony, all the men present volunteer for the work of building a snow hut for us, and with great skill, and a great deal of merriment, the work is completed by the time we have unloaded our sledges and arranged our things for the night. We have hardly moved in before two huge seals are dragged up in front of the hut, and cut up by the givers in person. The whole party, dogs included, are to share in the feast, to celebrate our arrival among the people of the Great River Mouth.

Early in the morning we were suddenly awakened by Niaqunguaq ["Little Brain"], the wizard, tumbling away the snow block that closed the entrance to our house, and tumbling in himself. He was in a trance, and spoke in a high falsetto. Placing himself in front of Qaqortingneq, he explained, in a sing-song, affected voice, that his helping spirits had visited him during the night, bringing word that Qaqortingneq had eaten salmon entrails while traveling in our company.

Now we had come from a part where extensive salmon fishery had been going on, and all had further observed that we had fresh, newly frozen salmon on our sledges. Raw frozen salmon entrails are considered the greatest of delicacies and Niaqunguaq, who was an energetic diviner of hidden things, could, there-



A fine specimen of the fox, trapped in the Arctic. Rasmussen notes that it is extremely rare to find a fox in poor condition; it is one of the most ingenious of beasts of prey, and when other animals are starving the fox always finds food, even in the hardest winter weather.

fore, pretty safely assume that our companion had eaten some on the way. This, however, was a serious offense, for salmon entrails are strictly taboo during the time when seal are hunted at the breathing holes.

Niaqunguaq capered breathlessly about on our trampled snow floor, alternately weeping and threatening. He knew it! He knew it! Qaqortingneq had been reckless, as usual, and now the hunting was sure to turn out a failure for the whole camp. He spoke in his own particular wizard language, which I did not learn until afterward, and I could not therefore make out much of his harangue at first.

I took the opportunity, instead, of getting our oil stove alight and making some coffee. This manœuvre was not without its effect, for hardly had the water begun to boil, and the inimitable aroma to tickle our wizard's nostrils, when he broke off the seance with loud lamentations. If he had said anything, it was only out of pure affection; and Qaqortingneq, who lay silent in his place with the blush of guilt upon his cheeks, was seriously invited to purchase absolution from the offended spirits by a modest gift to their humble representative, the wizard himself.

I hastened to improve the occasion, catching the wizard, so to speak, red-handed, and begged for some information regarding these helping spirits of his. He gave me an account of more than twenty helping spirits which had come to him out of space, and now aided him in keeping his fellows advised of any danger that threatened them.

Our good strong coffee seemed to have a calming effect upon his system; he ceased to talk in the squeaky falsetto and, by the time he left, was to all appearance just an amiable old fellow grown

garrulous, and glad of an opportunity to explain to others what an interesting person he really was.

WE STARTED on our way to the Magnetic Pole. My companion on this journey was a man named Alorneq ["The sole of the foot"]. I can best describe him by saying that his gums were always dry from constant smiling.

Our tempers were pretty well soured by hummocky ice, thawed snow, and bad going generally, with the irritation consequent upon driving through country one has no use for. But as soon as we got into Wellington Strait, the sun came out, full and clean, and our spirits revived accordingly.

There was a fresh northeasterly wind blowing. White clouds swept by in quick succession overhead, and here, where all land was one wearying monotony, we amused ourselves with watching all the fantastic pictures wind and sun and clouds painted across the sky. I do not remember ever having seen such cloud fantasias anywhere before. It was as if some lightning painter were con-

THE PECULIAR HABITATIONS OF THE ESKIMOS

On King Island in the Bering Sea the Ugevvangamiut tribe of Eskimos has constructed the cliff-dweller colony shown in the upper picture, with houses made of an outer layer of walrus skin and an inner lining of hay and driftwood. In the old days, especially round Point Hope, Ice Cape, and Point Barrow, houses were built of whale's bones, as shown in the lower picture, eked out with stones and peat, and lined with an inner paneling of heavy driftwood. The houses were often arranged with large store chambers, and sometimes divided off into separate rooms for different members of the family.

stantly improvising ceiling decorations, rubbing them out, and starting all over again.

In front, midway in the blue of the sky, would be a mastodon, so huge in its effect that it seemed not content with the space the receding horizon yielded; and overhead, a mammoth, in the midst of a storm cloud, with its hair standing up against the wind, and tusks ready to attack. But our visions are not exclusively zoölogical. Neither of us was really pleased to see them, for we knew well enough what it all meant; a storm, coming up from the southwest, that would be upon us in a couple of hours or so.

We were somewhere in a line with the Magnetic Pole at Cape Adelaide, when we came in sight of a few empty snow huts. We followed the tracks, continually coming upon those touching arrangements of seal skulls, which point the way, first to five huts, then to three, then to twelve, and then to twelve again.

Alorneq was a real tracker, nowise inferior to Qaqortingneq himself. He knew people by the way they built their huts, their manner of lying down to sleep, and their footmarks, and so, long before we came upon the people, we knew who they were. At two o'clock in the morning we agreed that we and the dogs had deserved a few hours' rest, and had just time enough to get a hut built before the storm of which we had had warning was upon us.

At eleven that morning we turned out again, and though we could not see more than a couple of yards in front of us, we struck camp. As the wind was at our back, it was an odd sort of driving, the sledge being mostly in front of the dogs, the animals creeping cautiously over the ice in fear of being swept away. Our faces, eyes, nose, mouth, and hair were so smothered in snow that we could hardly see. Now and again we managed to get a glimpse of the trail by lying down flat and scraping away the snow. And when Alorneq ran on ahead with his nose down, almost sniffing at the tracks, it was all I could do to keep the sledge and the dogs in hand. At five o'clock precisely, the whole of our team suddenly vanished from the surface of the ice, and on close examination, we found they had slipped into the entrance of a house—we were in the midst of a big camp, numbering at least a hundred souls. Of course, nobody took the least notice of our arrival, and Alorneq went from house to house, shouting out our names at each. Then out they came, creeping forth from their separate snowdrifts, surprised but cheerful and full of helpfulness, for which we were heartily grateful after the time we had had.

We built ourselves a snow hut under shelter of a double mound, which we had to construct first of all, to shield us during the work and to prevent the snow from being blown away from under our hands.

AND now the great amulet hunt was to commence; but I realized it was an undertaking which called for the utmost caution. In the interests of science, I had to try to purchase from these people all the innocent little tokens which they wore about them, and at the same time effect this in such a manner that they would not afterward have occasion to blame me for any misfortunes that might happen among them.

The religion of these people is based on a constant struggle against invisible, evil spirits affecting their everyday life in various ways, but more particularly through sickness and failure of the hunting. And to protect them against these evils they have only their amulets, in conjunction with taboo rites and magic spells. It was plainly a delicate task that lay before me, and the whole thing might be ruined by undue haste. I therefore spent the whole of the first day going from house to house and taking part in as many festive banquets of frozen salmon, the contents of caribou stomachs, and seal meat, as I could possibly manage. After all, people are much alike all the world over in some things, and there is nothing like sitting at meat together for making people friendly. It was some time before they would believe I was a white man; they took me for one of the

Eskimo traders from Victoria Land. But here, for once in a way, I found my white man's authority useful, and told them at length and in detail of the distant country from which I had come.

In the meantime I had given Alorneq instructions to unpack our trade goods and set them out in our hut. There were lovely gleaming needles—taken out of the papers to show more effectively in bulk—knives, thimbles, nails, tobacco, matches—all these little elementary trifles that are matters of course to us, but of the greatest value to people living beyond the ordinary range of civilization. And I noticed with satisfaction that there was a constant stream of people over toward the snowdrift where I had taken up my quarters; evidently, visitors to the exhibition within.

I finished up the evening in the house of the oldest inhabitant, a famous medicine man, who had lived a pretty strenuous life, trusting in his own strength, but was now bowed with age and hardship. He lay on his sleeping place and smiled at me as I entered. His face shone with a curious glistening sheen that made me think at first he must be suffering from some disease, but I soon found he had merely washed himself with oil in honor of my visit. We discussed serious matters, and it was not long before he realized that I was as well up in the mysterious forces of life as he himself. We spoke more particularly of amulets and their significance, and agreed as good colleagues that I was also an expert in this.

When I returned to my hut late that evening, it was crowded with men and women. All had brought with them trade goods of the ordinary sort, white foxes' skins, a wolverine or so, and the like. There was a murmur of disappointment among the assembled visitors when I informed them that I was not a trader in the usual sense of the word. I explained that I was seeking information concerning the ways and customs of different tribes, and had come to visit them now because I had heard they had the strongest amulets. I told them I came from a country so far away that I was exempt from all taboo regulations. I then made a solemn speech on the subject of amulets and their use, in the course of which, besides referring to my recent conversation with their own local medicine man, I strengthened my discourse with quotations from famous wizards in other Eskimo countries, whose names, it is true, they now heard for the first time, but served none the less to make a good background for my own observations. I pointed out with emphasis that in the view of their own medicine man the virtue of an amulet was not lost to its owner even if he lost the thing itself: the magic power of the amulet remained with the person who had worn the amulet from childhood. And my main argument then was that if a *lost* amulet, vanishing away to no purpose whatever, still continued to protect its former owner, then the same at least must apply to an amulet which, being traded for something in return, actually brought its owner an additional advantage. I had no wish myself to wear the amulets I bought; it was not their magic power I wanted at all, only the article itself, and its history.

It was evident that this kind of trading came as a surprise to them, and they still held out their various furs as before. But in vain; I pointed inflexibly to *my* wares, and said it lay with themselves to decide whether we should trade on the following day or not. I then politely requested the visitors to leave, as both Alorneq and I were tired, and needed rest. Through a spy-hole in the snow wall I could see them afterward, going down in little groups to the old wizard, whose confidence I knew I had already won.

We slept long that night, and it was late before we moved away the block of snow with which the entrance to a hut is closed at night when the inmates are ready to sleep. It is considered tactless to go visiting before this has been removed.

Alorneq and I made some tea, and ate some seal meat; but despite the hospitable

opening of our doorway, no visitors appeared. I was beginning to think I had lost the day, when a girl, who had noticed that I had some beads also, came up to the entrance and seemed hesitant. We called to her, and she crept in through the passage with all the amulets she was wearing for the protection of the son she hoped to bear. Women rarely wear amulets for their own protection; the Eskimo idea is that it is the man and not the woman who has to fight the battle of life; and so we find even little girls five or six years old wearing amulets for their future sons. For the longer an amulet has been worn, the greater is its power.

The girl in question, Kuseq ["The Drop"], handed me a small skin bag in which she had packed up all the amulets worn, till a moment before, in various parts of her inner and outer clothing. I unpacked them; innocent, mouldering things, that smelt nasty, not in the least suggestive of the magic protection they represented. I pulled out a long, black swan's beak from the bag, and asked her what that was for. Very sweetly and shyly she answered, with downcast eyes: "That the first child I bear may be a boy."

Then came a head of a ptarmigan, with a foot of the same tied to it; this she explained was to ensure that the boy should have the qualities of the bird, and be a swift and untiring runner when hunting the wild reindeer. A bear's tooth gave powerful jaws and good digestion. The skin of an ermine, with the skull tied in its place, gave strength and agility. A small flounder was a protection against danger when encountering strange tribes.

These were all she would part with; she had still one or two items remaining, but preferred to keep them in case of accidents. In the meantime, a number of young men and women had entered the hut, and stood round giggling, making her more embarrassed still. But their scornful smiles vanished when they saw what she was given in return. Beads enough for a little necklace—and two whole needles into the bargain. When she left, unable quite to conceal her delight at the deal, those who had laughed at her tumbled out likewise in a hurry. And I realized that Kuseq's little fall from grace had gained me what I wanted. The rest would follow, now that Eve had led the way.

And true enough, in the course of the next two hours, there was such a run on the house that I feared lest the snow blocks should be literally lifted from their places. Before bedtime, I had sold out my whole stock in the improvised store, but had in return more than two hundred amulets, unique of their sort.

Among those accounted of greatest value, and most frequently recurring, was the tern, a sure and daring fisher, the foot of an ice loon, which gave skill in manœuvering a kayak. A raven's head, with claw, ensured a good share of game, the raven being noted for always arriving on the spot when a kill is made. Caribou teeth make a good caribou hunter; a bee with the whole of its brood sewed up in a fragment of skin gave a good head; a fly, invulnerability, because a fly is difficult to hit; a water beetle, strength in the temples. One of the few women's amulets proper was the scale line from a salmon skin, intended to give fine and strong stitches in needlework.

ALORNEQ and I packed up the amulets as carefully as we could, and noted their significance in my diary. We then prepared to leave at dawn the next day; but here we had not reckoned on the old wizard, who came along at the last minute and with the full force of an oracle upset our plans.

The darkness was just giving place to the first mist of day when we heard a creaking in the snow, and voices; it was the old medicine man, who had got his son to help him along to our hut, and now wished to speak to me. He came in, and while we sat down to a simple breakfast, he explained that he himself, trusting in the good impression I had made on him, had sent his children and grandchildren to sell me amulets with the rest.

White men's goods were certainly rare in these parts, but even assuming that our theory of the amulets held good, still, there was no getting away from the fact that an amulet was an amulet. Now, after all I had told them about the long journeys I had made, and the innumerable tribes both of white men and Eskimos I had visited, it was plain that I must be a man of unusual vitality to be able to do all this; and since the part of a human being having the greatest power of growth was the hair, he proposed that, in order to avert the wrath of wayward spirits, I should give a lock of my hair to every one who had sold me amulets.

I at once saw that this was only reasonable. On the other hand, it was winter time, and cold; it would be, to say the least, an inconvenience to set out from the camp entirely bald. However, we agreed that those who had given me the most valuable amulets should have some of my hair. I explained, and he agreed, that parts of one's clothing might also be used as amulets; so I added an old fur jacket and shirt to the sacrifice. This arrangement met with satisfaction all round, and in the course of the morning, the old man, whose name was Itkilik, shared out my two garments in little pieces, following the list of amulets received in my diary. Only the sellers of extra strong amulets received locks of my hair, cut off somewhat ungently by Itkilik himself with a blunt skinning knife, there being no such thing as a pair of scissors available. When at last the ceremonies were over, my appearance was hardly what a barber at home would have expected of a gentleman.

Finally, about noon, I managed to get away, followed by cries of farewell from the whole village. And I realized that I had not only procured an altogether unique collection, but was taking leave of friends who were convinced I had given them more than I had received.

Thus ended my amulet hunting at the Magnetic Pole.

The Almighty Atom

By C. E. BECHHOFER ROBERTS

I HAVE just returned from a layman's Odyssey through the scientific centers in the great universities and laboratories of Europe, talking to the men who are working at the problems affecting our existence and examining the queer apparatus and inexplicable formulæ with which they are traveling through uncharted darkness toward their distant goals. The only European countries I did not visit were Portugal, Greece, Rumania, and Russia; probably in the present state of scientific things I did not miss anything of very great importance.

I am writing as a layman for laymen. My aim is briefly to describe some of the achievements that belong to the phase of physical sciences. I am certainly not pretending to write as a scientist. When I set out on my journey I fear I had only the most rudimentary ideas about the problems that engross the scientific world to-day. All I knew about physics and chemistry, for example, —and these are the only sciences that will be dealt with in this article—was that men everywhere were endeavoring to force the atom to yield its secrets. The invisible and still indivisible atom has become the almighty atom, a veritable colossus.

For five months I was in constant touch with the most brilliant workers in this field—physicists, chemists, and mathematicians—witnessing their experiments and listening to their theories and criticisms. I shall long remember the encounters at Copenhagen with Professor Niels Bohr, the physicist whose theory

concerning the structure of the atom has revolutionized existing ideas about it. One thinks perhaps to find a kind of superior schoolmaster, elderly, pedantic, well pleased with himself and his fame—

> O passionate Héloïse,
> I too have lived under the ban,
> With seven hundred professors,
> And not a single man.

You meet, however, a modest young man who seems unwilling to hazard an opinion upon any subject, least of all that in which, after Sir Ernest Rutherford, he is the acknowledged leader.

At first glance you might take him for a young professional man, not very successful in his calling. He is of middle height, clean shaven, deliberate in his gait, with a slight, thoughtful stoop; his clothes are plain, his boots heavy. One notices large bright eyes, and when he takes off his hat an enormous brow is disclosed. You speak to him of his atomic theory; he returns a soft, hesitating answer in excellent English, spoken with the lilting accent of Scandinavia. He may even confess, under pressure, that if his theory is finally adopted—which means, of course, if it continues to fulfil the tests required of it—many of the most cherished scientific and philosophic assumptions will need to be revised.

The son of a wealthy Danish banker, he worked for some time under J. J. Thomson at Cambridge and Rutherford at Manchester. Denmark is a comparatively poor country and cannot afford properly to subsidize the Physical Institute, of which he is the head; he is, moreover, besieged by students from all over the world, eager to follow him in his researches. Upon their experiments and the maintenance of his laboratory he has expended both his private fortune and the Nobel prize he was recently awarded. His science is his only interest.

His younger brother, Harold Bohr, a mathematician of high reputation, resembles him greatly in appearance and manner. For example, in response to a remark upon his brother's brilliance, he admitted in some confusion: "Yes, his theory has indeed had a certain success."

In their modesty the Bohrs are matched by Einstein, another questioner of classical physics. A rather older man, and better known to the general public, Einstein has been just as little affected by applause. Thick-set, short, with a great expanse of forehead surmounted by the familiar clustering hair, his every movement displaying good nature, he greets you in his unpretentious study as if you and not he were the really important person. He, too, has that fine simplicity that distinguishes a master mind.

When I called on him, he had just mislaid a check. No, he admitted to anxious friends, he had not stopped payment of it at the bank; ought he to do so? And apply for a duplicate? Was that so? The loss did not so much disturb as perplex him. Where could the check have disappeared? I looked round at the hundreds of books on his shelves and tables and floor and hazarded the easy guess that he had inadvertently placed it in one of them and forgotten about it.

"Very likely," he agreed, struck by the suggestion.

He lives at the top of a high house in one of the Berlin suburbs. The *concierge* downstairs seemed unwilling to let me use the lift; the landlord, she explained, disliked the waste of the current. "But what does Herr Professor Einstein do?" I hinted. "Oh, he usually runs upstairs," she replied.

I was reminded of the probably apocryphal story of his seeing a workman fall off the roof of the house opposite. Einstein rushed down to the street, found that the man had fallen on something soft and was almost uninjured, and promptly asked him if he had felt any force pulling him towards the ground as he fell!

And there is such a man as Professor Planck, the founder of the *quantum* theory, which both Einstein and Bohr have used in their various ways. He is elderly now and, as his tall, stooping, weary figure suggests, he has been less

fortunate in his life than in his work. Indeed, on the very day when he was awarded the Nobel prize, his second and only surviving daughter died, and the honor was turned to ashes for him by this terrible loss. He, too, I soon discovered, has the noble simplicity that I had always hitherto associated with poets, without often finding it in them.

I suppose that Professor Hilbert, the famous Göttingen mathematician, is the best example I met of the supposedly typical professor. His absent-mindedness is a constant joy to scientists all over the world. Many of them already know his remark about one of the bridges at Copenhagen.

"It's just like the bridge at Hamburg," he said.

It was pointed out to him that no two structures could be more unlike. He looked at the bridge thoughtfully for a minute or two. Then he answered: "Why, it's just the same. It goes from one bank to the other, and there is water underneath it."

It is difficult for me to stop speaking of the men and to turn to their work. I have met eminent men of various kinds in many lands, but I had never met a body of people so truly remarkable as the scientists. Wherever I went through Europe I found them the same. Brilliant, accurate, ingenious, unpretentious, devoting every hour of the day to their labors with little thought of self and career—they were alike in every country.

I am not suggesting, of course, that they are international in the sense of being indistinguishable. The opposite is the case. No one could be more obviously French than Professor Perrin, for example, the head of the department of physical chemistry in the Sorbonne, famous for his work upon the Brownian movement—the ceaseless agitation of microscopic particles which has been made to reveal so many secrets of the molecule—with his vivacious and jovial heartiness. Or—another type of Frenchmen—the keen, incisive Émile Borel, Professor at the Sorbonne.

Unmistakably French, too, was the session of the Paris Academy of Science, at which I was present. Entering the room in which it meets, on the Quai Conti, I was engulfed by a deafening hubbub. Everybody seemed to be talking at once and ignoring the president, who, intermittently ringing his bell, attempted in vain to secure a hearing for an aged scientist. The latter, eyes glued to manuscript, was reading aloud a paper on some rare mushrooms. It was not that nobody was interested in mushrooms—though I dare say few were—but his colleagues in the Academy knew as well as he that his paper would soon be printed in the official journal, and they took the opportunity to chat with one another.

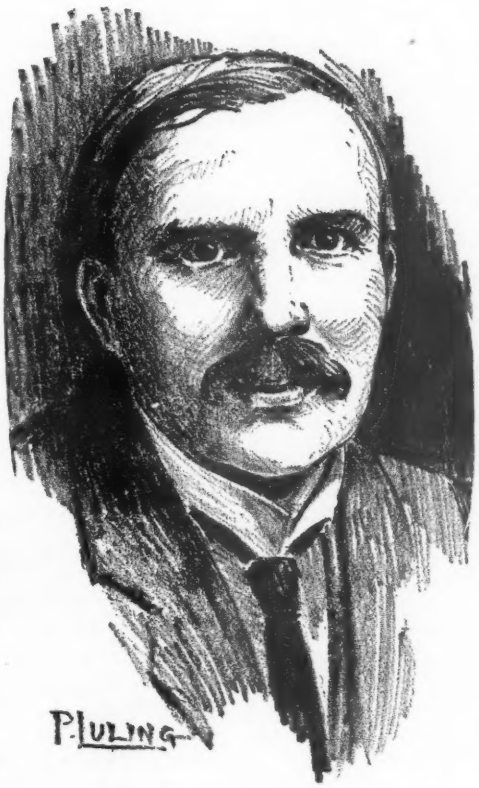
In Germany the men of science are rather more solemn in their bearing, although by no means devoid of a sense of humor. The Scandinavians are inclined to be unemotional and clearheaded, the Poles lively and keen; the Spaniards discuss their work with a typically national appearance of courteous melancholy; the Dutch scientists, wreathed in smiles and smoking enormous cigars, conduct you through their spotless laboratories as if you were an old friend visiting the children in the nursery. You may see and compare all these types in the fine laboratories at Zurich, with their international staff of professors and the students from every country.

MEDIÆVAL INSTITUTIONS IN FRANCE

AS IS natural, the laboratories also are of many kinds and have their own characteristics. In France, for instance, you have two main types, those of before the war and those built recently. There are the old-fashioned ones of the Sorbonne and the Collège de France, in some respects so primitive that you wonder how Professors Perrin, Langevin, Fabry, Urbain, Cotton, and others have done and are doing so much fine work. But, grouped near the magnificent Radium Institute in the Rue Pierre-Curie, over which Mme. Curie presides, sternly gazing through somewhat intimidating double-lensed spectacles, there are several new buildings. In one of them Professor

Moureu, the chemist, is already working, and Professor Perrin also is to have new premises there. To say that the latter is delighted at this would be an absurd understatement of his enthusiasm.

There are, it is true, a very few fine laboratories in France dating from before the war but challenging the newest in convenience and equipment. Such are those in the Pasteur Institute in Paris and at the University of Strassburg, now restored to France. The latter were built by the Germans on German lines and with a definite intention to impress the Alsatians. To-day they are directed by Professor Pierre Weiss, the father of the "magneton" and himself a magnet drawing young men to Strassburg from many parts of Europe.



SIR ERNEST RUTHERFORD

What did I know of the atom when I started on the journey? Very little; I will try to summarize it. I knew that all matter in and on the earth, in the atmosphere surrounding it, and in the sun and stars is made up of elements, of which some ninety are known to exist. All matter consists of molecules of elements or of combinations of elements, the molecule being the smallest amount that can separately exist. But a molecule in turn is composed of atoms, which are the lowest possible units of any element. All matter, then, is built up of collections of atoms; and the atom of each element is different from that of every other. At this point my knowledge of the subject ended.

As the name implies, the atom was originally supposed to be indivisible; but as Professor Soddy has well said, "The atom is not nature's unit, but ours." Indeed, the structure of the individual atom is now exercising the principal scientific strength of the world. It is the problem of problems for the physicist and the chemist; mathematicians are constantly working upon the others' results, bringing order into the chaos of discoveries. Everywhere I went I heard sooner or later that the laboratory was working directly or indirectly towards the solution of this supreme problem.

Is it a physical laboratory? then you will surely find a man there patiently investigating some phenomenon of X-rays or radio-activity or magnetism, or endeavoring to correct, perhaps by a millionth part, the work of another scientist thousands of miles away. In the chemical laboratories you may make your way through the asphyxiating odor of fused minerals—shall I ever get the atmosphere of Professor Grignard's laboratory at Lyons out of my lungs?—or past the hospital-like tables of colloid investigators—I think of Zsigmondy's at Göttingen and Svedberg's at Upsala—and there again some one will be working on the atom. And in Christiania I was

going through the admirable Geological Institute, devoted both to the study of rocks and minerals and to such practical problems as the making of fire-proof bricks, when I was amazed to hear Professor Goldschmidt remark that some pulverizing experiments he was undertaking would, he hoped, help to solve a vexed question of atomic structure.

THREE SCIENCES, ONE PURPOSE

NO one can tell to-day where physics ends and chemistry begins. The range of experiment has become so vast and complicated that a research worker can hardly keep in touch with any but the line of work in which he himself is occupied. A few men are great enough to stand, as it were, above the others and direct them; but all, old and young, are faring in the same direction. One might say that there is now a single science in which physics, chemistry, and mathematics are combined, its purpose being the study of atomic structure.

Like the guinea-pig, the axylotl, and the antirrhinum, the atom is destined to be the victim of modern scientific progress. Day in and day out in a thousand laboratories all over the world it is being probed and battered and bombarded, heated to enormous temperatures in electric furnaces, and even, in Professor Kamerlingh Onnes's wonderful laboratory at Leyden, frozen to within a degree of the absolute zero, 273° Centigrade. It is of interest, by the way, to note that Professor Vegard of Christiania is endeavoring, so far with some success, to reproduce in this laboratory the phenomenon of the Aurora Borealis, which he supposes to be the spectrum of elements frozen in the upper air.

But in return the atom may claim to be the colossus that bestrides the scientific world of our days. I use the phrase figuratively, of course, since many thousands of millions of millions of millions of atoms are contained in a pin's head. Radium, of course, is notoriously expensive; an ounce of it would cost almost five million dollars. Some months ago, in London, I heard Professor Millikan of Pasadena remark that with a magnification of forty billion times—so that a bird-shot would be the size of the earth—the diameter of an atom would still be less than a yard.

Even of the tiny expanse of the atom less than a million-millionth part is of solid substance, the rest being empty space. The nucleus, which is this part, despite its exceedingly small size, contains nevertheless nearly the whole mass of the atom; it is charged with positive electricity, the charge and the mass varying according to the element of which it is a part. The atom contains also electrons —single charges of negative electricity— which have each perhaps about the same incredibly small volume as the nucleus but a very much smaller mass!

Inconceivable as it must seem to a layman, the scientists of to-day are able to make their experiments not merely with a mass of molecules but also with individual atoms and even with those minute parts of them, the nucleus and the electron. One of the first experiments I saw on my journey proved this apparent impossibility.

BOMBARDING THE MOLECULE

IMAGINE the laboratory—a large, well-lighted room; long tables covered with apparatus, mazes of glass vessels and tubing, thermometers, scales, etc.; electric wires, switches, and plugs everywhere; enormous electric magnets; lead-lined X-ray cabinets like telephone booths; spectroscopes through which white-aproned students gaze, entering the results of their observations in graphically lined notebooks. The air is full of the throb of dynamos and the crackling of X-rays.

The professor tells me to look into a small glass window, a few inches in diameter, in the top of one of the pieces of apparatus.

"Now watch carefully," he says. "We are bombarding the molecules inside that chamber with alpha particles from a radioactive substance. When I pull this lever over, it will expand the air inside the chamber, causing a cooling, and you will

see the paths of the particles. If you are lucky, you may notice that, while most of the paths seem to meet with no interference, one will be sharply bent to the side. That will mean that it has struck the nucleus of an atom."

I watch. He pulls over a lever. The little window clouds and the mist is traversed by a few white lines, like the tracks of shooting stars, which disappear immediately. But even in the fraction of a second during which they are visible, I notice that while most of them are straight, one suddenly, near the end of its career, shoots off at an acute angle. It is the path of an alpha ray which has struck the nucleus of an atom—that ten-thousand - million - million - million - million-millionth part of a cubic millimeter!

They explain to me how this experiment, which is known by the name of its originator, C. T. R. Wilson, is made. Briefly, the air in the chamber into which I was gazing is bombarded with alpha rays, and these on their route ionize—shall I crudely say, "electrify"?—the particles of air with which they come in contact. Of course in the ordinary way the paths of the alpha particles would not be visible. But the expansion of the air in the chamber produces a cooling, with the result that it will no longer hold so much water-vapor, and this condenses in minute drops upon the electrified air particles which strew the path of the alpha ray, forming the gray lines I saw. Most of the alpha particles pass straight through the air without meeting with any serious obstruction, because the atom is mostly empty space.

The alpha particle has been found to consist of a helium nucleus with two charges of positive electricity; as it passes through the air it seeks and captures first one electron (*i.e.*, a negative electrical charge) and then another; when it has captured two, its charge is neutralized, and therefore, as it no longer ionizes the air particles, it no longer discloses itself. This explains why all the rays disappear from sight after traveling a certain distance. The forked line, on the other hand, shows that the particle has actually struck the solid nucleus of one of the atoms of the air and been deflected from its original path.

Photographs have been taken of this experiment, and, by using them, Rutherford has been able to confirm his measurements of the charge of the struck nucleus, the size of it compared with that of the whole atom, and other valuable experimental results which he had gained from another method of bombarding the atom.

One of the most valuable instruments for studying atomic structure is the spectroscope. As everybody knows, this is an apparatus for separating the components of a beam of light. The light is made to pass through a slit, and, in the particular form of spectroscope that concerns us here, it then falls upon a ruled grating; the lines of the grating split up the light according to the wave-lengths of the various rays composing it, and these separated rays are thrown upon a screen.

SPLITTING A BEAM OF LIGHT

IF THE optical spectrum, as this is called, is examined minutely it is found to contain certain sharp lines. Every element indeed has typical spectra, or groups of spectral lines. Some of the spectra consist of relatively few lines, such as the principal spectrum of sodium to which the bright yellow lines belong; others, like those of iron, are extremely complicated.

Professor Lorentz, the famous Dutch theoretical physicist, long ago put forward the hypothesis that these lines in the spectrum correspond to the radiation emitted by the oscillation of the electrons in the atoms of the substance under examination. This theory linked the study of the spectrum with that of the structure of the atom.

Professor Zeeman, whom I saw in his fine new laboratory at Amsterdam, is famous for his practical work in the field first theoretically surveyed by Lorentz. He discovered in 1896 that, if the source of the light under spectroscopic examination is subjected to a magnetic field, the characteristic spectral lines become multiplied—in the simplest cases, doubled

or trebled—returning to their original state when the magnetic field is cut off. Lorentz at once claimed this as a proof of the correctness of his electronic theory; the multiplication of the lines, he said, is due to the effect of the magnetic field upon the vibrating electrons in the atoms of the substance.

This was a valuable step forward, but it did not explain quantitatively why the spectra of various elements are different and why, as in the case of hydrogen, they have a definite mathematical internal relationship. Before speaking of the advance which has been made towards the solution of these problems, it may be well to say a word about a different branch of spectroscopy, that of X-rays and crystals.

Although American physicists have produced gratings for spectroscopes with 20,000 accurately ruled lines to the inch—a marvel of technique—even these were found to be insufficient to measure the extraordinarily minute wave-lengths of X-rays. In 1912, however, the German scientist Laue thought to use a crystal instead of a grating to split up the component parts of the X-rays. He reasoned that the atoms of the crystal were regularly arranged, lattice-wise, in all directions, and he calculated on this assumption that the X-rays, making their way through the crystal, would be separated just as if it were a flat grating ruled to the technically impossible scale of more than 20,000,000 lines to the inch. His brilliant idea proved to be correct, and the wave-lengths of X-rays were measured by this process.

The difficulty of obtaining crystals large and regular enough for these experiments suggested to Professor Debye, the genial Dutch physicist now at Zurich, the use of powdered crystal for his spectroscopic work; and this too has had excellent results.

But the most valuable result of X-ray spectroscopy was an indirect one. If you can use the regular spacing of atoms in the crystal to give information about X-rays, you can equally well do the reverse and make the X-rays tell you about the regular spacing of the atoms of the crystal. This has indeed become a most fruitful line of research in the hands of Sir William Bragg, of London, his son, Professor W. L. Bragg, of Manchester, and others. The Braggs have been awarded a Nobel prize for their researches in this field.

It was Moseley, the brilliant young English physicist who was killed at Gallipoli in 1915, who, using X-rays and crystals, discovered that the X-ray spectra of the various elements were simpler in construction and had more in common than might have been supposed. He proved that the X-ray spectra showed a definite progression from each element to the next in the order in which they had been ranged according to their atomic weight. Now optical spectra pertain to the outside of the atoms—the radiation given off by the electrons—but X-ray spectra pertain to the inside of them, with the nucleus.

Moseley showed that the regular change was due to a regular increase of the nuclear charge. But, since the nuclear charge is positive and the electrons negative, every increase in the nuclear charge must be accompanied by a corresponding increase of negative electronic charges, that is, by an increase in the number of electrons, since each electron is a single negative charge. Therefore, Moseley declared the "atomic number" of any element—*i.e.*, its place in the order of the elements according to their atomic weight—gives the exact number of electrons in each of its atoms, when these atoms are in the neutral state.

LITTLE SOLAR SYSTEMS IN THE ATOM

THUS hydrogen, the lightest and consequently first on the list—in other words, with "atomic number 1"—has just one electron in each atom; helium, which is second, has two electrons to an atom; carbon, with "atomic number 6," has six electrons; uranium has 92, and so on. This magnificent discovery of Moseley's has been confirmed by a variety of experiments, and is now accepted as proved.

How are the electrons grouped round the nucleus? This problem has occupied physicists for the last dozen years.

It is unnecessary to mention here all the theories put forward. The main controversy so far, however, has been whether the electrons revolve around the nucleus, like planets around a sun, or are stationary. The latter hypothesis, although useful to account for some of the chemical properties of the atom, has not found favor with most students of atomic structure. It is highly artificial and, to maintain it, its supporters have had to postulate "cells" in the atom in which the electrons are confined. It seems unlikely that the true economy of the atom is represented by this "housing scheme" —to use Professor Andrade's happy phrase in his admirable book "The Structure of the Atom."

Assuming then the rival theory, that the electron revolves round the nucleus, we are immediately faced with a fundamental difficulty. The emission of light accompanying the revolution of the electron will, according to the older theories of electricity and magnetism, lead to a continual contraction of the orbit and finally make the electron fall into the nucleus. But the mere fact of the existence of sharply defined spectral lines, characteristic of each individual element, shows that there is no such constant contraction of the orbit towards the nucleus, for, were such the case, the spectrum would show not sharp lines but merely a continuous band.

Thus either the idea that the electrons emit light or the classical electro-dynamic theories must be set aside.

ONE THEORY FROM FOUR

IT IS with a solution of this difficulty that Bohr entered the field in 1913. His followers claim that he has blended in one theory the four chief but hitherto separated branches of atomic physics —Rutherford's nuclear atom model, the discoveries of regularities in the spectra of the different elements, the Lorentz theory of the electronic emission of radiation, and Planck's *quantum* theory.

Of the first three of these we have already spoken; it is now time briefly to consider the last. Professor Planck, at the beginning of the century, while studying the problems of radiation from hot bodies, found himself unable to explain the experimental results except on the assumption that radiant energy is emitted not continuously, as water appears to be running from a tap, but in small amounts varying with the frequency of the emitting substance. One *quantum*, or two or three or a hundred such little bundles of energy, can be emitted or absorbed, but not fractions of a *quantum*. The *quantum* is a *quantum* of energy and is different for every frequency of vibration; the *quantum* of red light is different from that of violet light, for instance, the latter being the greater because the frequency is higher.

This postulate of Planck—the inner meaning of which is not yet established—has had sound experimental results. No one knows why it works, but it does work. It will be observed that the *quantum* leads us a long way back toward Newton's corpuscular theory of light, though in a modernized form. Einstein seized upon it years ago and solved several disputed problems with its aid. And now Bohr has used it to bridge some of the difficulties in the atomic theory.

Bohr has suggested that, for every kind of atom, there is a set of stable orbits in which the electrons revolve without emitting radiation and without any shrinkage of the orbits. But, under the influence of an impact, or of radiation from without, an electron might jump from one stable orbit to another, and during such a jump, and only then, it would emit a *quantum* of radiation. The nature of the orbits being determined by the number of electrons in the atom, each atom will have a certain set of possible jumps, the results of which produce the spectrum characteristic of that atom. Bohr explained on this assumption the spectral lines of the hydrogen atom which has a single electron only, and of certain similar light atoms.

It is obvious that there must be a considerable number of possible stable orbits even when an atom has only one or two or three electrons, and the determination of these and of the consequent

frequency of the emitted radiation provides a set of very complicated problems in higher mathematics. When an atom has, say, twenty-nine electrons, like copper, or eighty-eight, like radium, one might consider the problems insoluble.

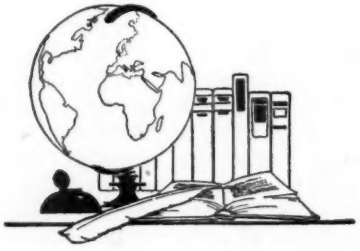
But I put nothing beyond the powers of present-day mathematicians. They are born, not made. One might even say of them that they lisp in numbers! Einstein, for example, who disclaims any great mathematical knowledge, was studying its higher branches at the age of twelve. Abel, the ill-fated Norwegian mathematical genius, and Galois, his French counterpart, did their best work when they were barely out of their teens; indeed, the former died at the age of twenty-six, and the latter at twenty-one. Bohr has in his laboratory a young German, about twenty years old, whom many regard as one of the greatest living mathematicians of his nation. The two best-known Polish mathematicians I met, Professors Mazurkiewicz and Sierpinsky, seemed to me to be only a few years older, and they spoke respectfully of a still younger compatriot at Lemberg.

A "ZERO-AXIAL SKEW PFAFFIAN"

I WISH, however, most definitely to avoid any appearance of familiarity with the mathematical problems of this or any other time. Look at any advanced mathematical treatise, and you will understand my diffidence. Even such an everyday concept as a "zero-axial skew Pfaffian" passes my understanding!

The already great mathematical difficulties of the Bohr theory have been added to by Professor Sommerfield of Munich, whom I was fortunate enough to meet when he was passing through Utrecht. He has built largely upon the fact that the electrons have elliptical as well as circular stable orbits in all directions, and, using the particular variation of the mass of the electron with velocity that follows from Einstein's relativity theory, he has achieved remarkable results.

I shall not attempt to venture farther lest I get irrecoverably out of my depth. It is enough to say that Bohr's synthesis, although not yet accepted by all atomists, has met most satisfactorily the tests so far made of it. All that can be expected of a theory is that it shall explain observed results; the better it does this, the more likely it is to be true. If it answers every demand upon it, it may be called a law. But one must remember that, like all the so-called "laws of nature," it has been formulated not by nature but by man, and that, therefore, a new Bohr or Einstein may at any moment challenge its universal applicability.



PERSONALITIES

The Man Who Sold the Airplane to Ford

William B. Stout Was a Dreamer Who Stuck to His Dreams

THE residents of Quincy, Illinois, who one day forty-five years ago called at a local parsonage to congratulate the Reverend and Mrs. James F. Stout on the arrival of a son, will remember him as William B. Thousands of men who were boys in the Middle West recall him as the ingenious writer who contributed toy columns for the newspapers under the name of "Jack Knife." Among automotive engineers he is familiarly known as "Bill" Stout. But people generally are now referring to him as "the man who sold the airplane to Ford."

Henry Ford has more opportunities to buy things than most of us because he uses so many commodities in his business. Many men have tried to sell him airplanes, and for years their efforts have failed. Not long ago one of the leading plane builders in Germany mustered a group of "high pressure" salesmen and laid siege to Mr. Ford in his laboratories at Dearborn, Michigan. After several weeks they packed up and returned home without even seeing him.

He has had all other kinds of transportation—cars, tractors, railroad, and steamships—and it was commonly thought that he was in the market for flying craft; but the aviation men knew differently. They had been told on innumerable occasions that not until they produced a practicable cargo-carrying airplane could they hope to interest Henry Ford.

He was not interested in converted military machines. Small wonder then, that the man who finally turned the trick is credited with a great achievement. For the day that Ford took up aviation the entire country accepted it as a sure sign that the day of the commercial airplane had arrived. And it is for that reason, if for no other, that people are interested in William Stout of Detroit.

As a boy Stout was by nature a whittling expert, and so recognized among his juvenile friends in St. Paul, Minnesota, where his father had a pastorate. His days were spent teaching the boys to carve toys. Anxious parents tried in vain to substitute the axe for the knife; the youngsters took to carving everything except kindling wood. They were the ones who gave him the nickname of "Jack Knife."

Among his creations were airplanes in a day when there was no aviation and few opportunities to study the science, because it had not then become a science. Flying was looked upon as the plaything of children and of men who should have known better than to try to fly.

Later on, a mechanical engineering course at the University of Minnesota provided a scientific background without entering into the problem of flight, though he may have managed to observe the law of gravitation and to discover the knack of balancing while carrying dishes to and from the table in a student boarding house. Having a few odd moments late at night, he conducted his toy columns in the newspapers, and they were circulated throughout the Middle West.

That experience, he says, prepared him to write on technical subjects, and it was in the course of this work that he met

Octave Chanute, who was also an engineer and one of the brave pioneers whose early gliding experiments with motorless planes helped to inspire the Wright brothers. The Wrights were then completing their flying machine. They made the first flight in 1903.

When "Jack Knife" and his wife went to Europe in 1906 to demonstrate their theory that two can travel as cheaply as one, on a motorcycle, they met Mr. Chanute, then lecturing in France on the principles of the Wright machine. Prior to his visit Europeans had not taken it seriously. Very little was known about it, in fact, for until then no photographs and no definite information had been forthcoming from the brothers, who were content to improve their plane in Dayton, Ohio. But their friend, Chanute, had gone to France with the idea of proving that they had at last developed a flying machine that would really fly.

Chanute's drawings and lectures attracted the Frenchmen, and it was not long before Delagrange, Pelterie, Farman, Bleriot, the Voisin brothers, and others were in the air with machines operated and controlled on the Wright principles. Mr. Stout paid expenses on the European tour by writing feature articles on these aviation activities, illustrating them with pen drawings. The newspapers published the material, but Mrs. Stout confided privately to friends that there were occasions when she wished that William's articles were longer and his drawings larger so that editors might feel inclined to send him more sizeable checks.

The diminutive checks prevented him from remaining a free lance journalist. Otherwise the artistic instinct might have triumphed over the practical in him, and the engineer might never have functioned. As it was, he kept both feet on the ground and became chief engineer for a cycle car company in Detroit. It was that period in our automobile history when buyers were tiring of the conventional of the day. Mr. Stout saw the trend of the motor era. The public wanted something representing comfort and economy of space. He mentioned this to other executives of the company, and late one afternoon, while they were walking about the factory, he found a piece of chalk and sketched on the floor his idea of what a roadster should be. They built it from his chalk designs. It was the first roadster model to appear.

That and many similar adventures in the motor car industry made him known as an inventor even in Detroit, which was full of inventors. But his was a dual personality. At night he became "Jack Knife" again, continuing to carve his toys. Some of them were put on the market and the royalties provided the funds for his constantly increasing experiments with flying machines. His models were flown about the lawn in early evening or on holidays until, like tired butterflies, they had satisfied the inventor's curiosity and were relegated to his private workshop in the attic. Meanwhile, he was investigating the possibilities of the thick-wing monoplane in an age which was mostly experimenting with biplanes and thin wings. There were a few experimenters in Europe who held to the theory that the thick-wing monoplane must eventually prove most practicable for carrying heavy loads, but the Detroit engineer seems to have been alone with that idea in this country.

Occasionally he found time to prepare illustrated articles on the airplane of the future, and his vision of the kind of craft which one day would fly out of Detroit with a paying load caused even his close friends to smile. This was in the pre-war days, mind you, when the flying machine was universally considered a military weapon of doubtful value. There was little confidence in it as a peace time vehicle. Other engineers, seeing Stout's effusions in the newspapers, thought him visionary to an extraordinary degree.

Still, none challenged his ability as an automotive engineer, and he was prominently identified with the development of the motor car when the United States entered the war and the makers of automobiles became units in the vast organization trying to make good the American boast that we should soon launch some

WILLIAM B. STOUT

"The man who sold the airplane to Ford," like Henry Ford himself, is an inventor who persisted in his aims when everybody advised him to stop playing and "go to work." He hopes that his all-metal monoplane will revolutionize commercial aviation.

25,000 airplanes over the Kaiser's favorite *weinstube*. But Mr. Stout did not rush to Washington with an offer to work for a dollar a year. He was modest, but not that modest. He had a home in Detroit and a family. He became chief engineer for the Packard Company's aircraft division and it was not until the spring of 1918 that they sent for him to come to the capital as technical advisor to the Aircraft Production Board. While there were many efficient fighting planes at that time, as efficient, at least, as any used in Europe, there were no bombers capable of carrying heavy loads.

More than a skillful bit of carpentering is required to build an airplane. There are such essentials as stability lift, power, and any number of technical questions to be solved for each kind of machine, which means that a plane must be able to fly steadily and to carry sufficient loads to warrant the risk involved. There was much speculation as to what the ideal plane might be, particularly a bomb-carrying machine.

One night, while on a train running between Washington and Dayton, where the Army had located its technical center, Mr. Stout explained to a group of flying officers his idea of a load-carrying, efficient bombing plane. It was a radical design, with single wings resembling those of a bat and internally trussed throughout so that the wires and braces could not be shot away with shrapnel. An unidentified passenger overheard the conversation. He telephoned to Washington and told the authorities about it. Within twenty-four hours Mr. Stout was ordered to remain at McCook Field and build his machine.

The army officers did not like it after it was set up and wheeled out on the flying field. They said it could not be manœuvered as quickly as a machine with double wings, which was no doubt true, though it was explained that a bombing plane is not designed for close fighting. Its purpose is to hit and run.

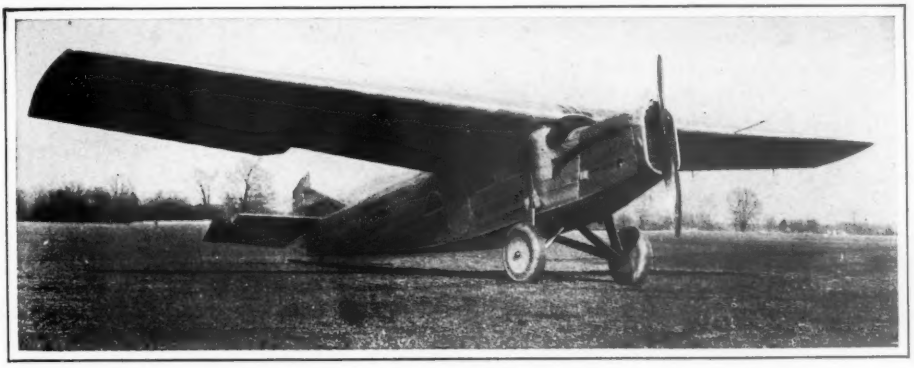
They flew the machine on a test flight and it performed nicely for a first trial of a new type. Stout had designed the first internally trussed plane in America, one which he believed could be developed for use in war or in peace. At that juncture the Armistice put an end to all Government work for the time being.

Mr. Stout went back to Detroit and opened up a laboratory after the war. He used his savings to finance the construction of a monoplane. It resembled closely his original conception which a Chicago newspaper had published in 1913. That machine was flown, but it had "bugs," which in aviation parlance means that it had faults, and a faulty machine is not trustworthy under any circumstances. For three years he turned out an airplane every twelve months, each an improvement over its predecessors. He interested the Navy and obtained an order to build a torpedo-carrying monoplane. On its completion the Navy sent a trial board to Detroit for the tests. One of the officers flew it. The inventor's hopes rose high. Another officer took it up. The hopes were dashed to the ground along with the plane. As the mechanics hauled the wreckage off the field they carried with them the shattered plans for doing business with the Government.

But he did not quit. He whittled. He invented a toy. Some of you have seen it—the mechanical golfer. You hold it as you would a golf stick. A tiny figure down at the end of the club is guided by controls in your hand, and it can be made to hit a little ball. A syndicate exploited the toy. Friends urged Stout to get out of aviation. They said he was still an automotive engineer and a good one. Invariably, when he appeared in public, one of them would come up and say something like this:

"Bill, I've known you many years. You're all right, Bill. But the trouble is, you've gone into this fool aviation game too strongly. In other words, Bill, you're a nut. Now come with me and there'll be a salary check every two weeks and—"

Some of those more kindly disposed said he was living ahead of his time. He merely smiled and kept on seeking another place in which to build an airplane. This time he would make a commercial airplane. No more military craft for him.



The plane Ford bought, the *Maiden Dearborn*.

He located his new plant in the basement of an abandoned factory building, the only part of the structure that did not leak when it rained. He assembled his small force of loyal assistants. They started to build an all-metal commercial transport according to the original plans which he had been improving for many years. It would be the first of its kind in this country and capable of carrying a ton load, a practical commercial airplane.

Very often bills would fall due and there would be no money to meet them, but something always happened so that he did not have to close down. On several occasions when there was nothing to meet the payroll, the royalty checks on the mechanical golfer would arrive on the day the men were to be paid. So much for the jack knife training.

Then Stout set out to organize a company by the strangest methods yet recorded. He had no funds. There was no credit for aviation ventures. He had no desire to sell stock in a proposition that the bankers would turn down. He wrote a letter and blueprinted it himself to save the expenses of typing and manifolding. He sent copies to business men in Detroit and Chicago. He got out about fifty letters a week, enclosing with each letter a drawing of the new machine, a drawing he had made and colored with crayons because there was no money to pay for printing. With that sort of an appeal he invited hard-headed and practical men of business to join his company. He went further. He told them that they probably would never again see their money or receive dividends on the investment. They were astonished. But he explained that if his plans proved success-

Stout and the mechanical golfer

The *Maiden Dearborn* in flight.

ful, their support might reflect credit on Detroit, the automotive center.

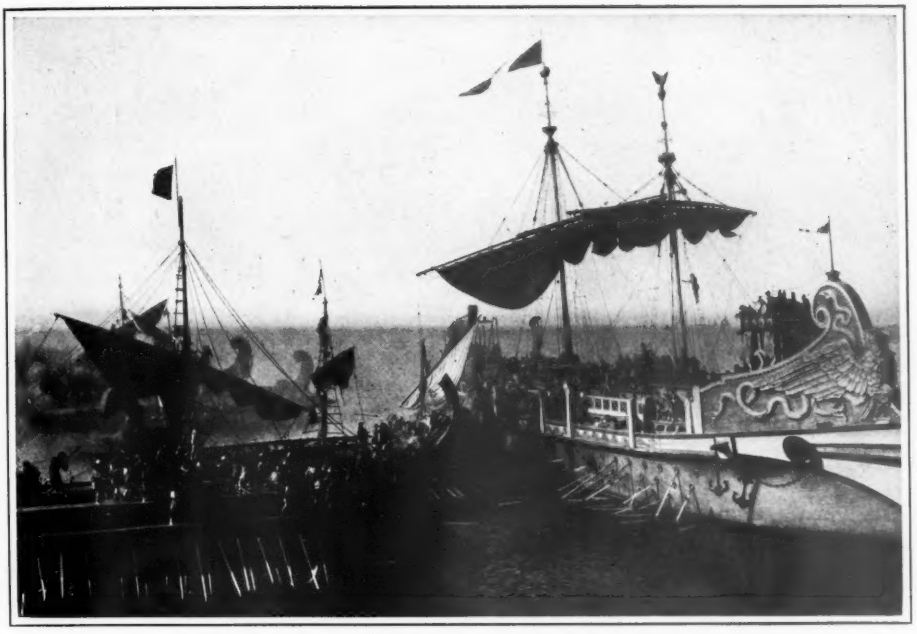
One hundred and ten men put up the money in equal amounts. This list of shareholders representing the financial and business life of that section was a remarkable thing in itself. Among the subscribers was Edsel Ford.

An experimental transport was completed in 1924. More than a thousand passengers were carried on test flights. When Henry Ford built his great airport at Dearborn, he put up a factory building and invited the Stout company to move out from Detroit. He took an interest in the plant from the beginning. The man who revolutionized the motor car industry by his mass production methods was especially interested in Stout's tools, jigs, and unique methods of making all-metal planes whereby they may be built quickly and in unlimited quantities. When the first new and improved commercial plane was ready to fly, Mr. Ford drove over to the plant, bought the ship, and ordered five more.

Stout's planes are carrying Ford mail and parts between factory branches, and Stout hopes that they are the first of a fleet which will soon be traversing air routes throughout the country.

—*Howard Mingos.*

Mr. Stout, Edsel Ford, and Henry Ford standing in front of the *Maiden Dearborn.*



Not ancient Rome, merely Hollywood. "Roman soldiers" and "pirates" prepare for a battle scene for the film "Ben-Hur."

The Reform in the Movies

A Second Article on the Motion Picture Industry

By EDWARD G. LOWRY

BEFORE a motion picture becomes a five pound strip of celluloid film in a tin can and is dropped out of the express car at Crown Point, Indiana, for exhibition in the local theater, it has had a curious and interesting and exciting career. It has come through many transformations. It has been shaped and reshaped by scores of hands.

This is what happens.

The author cudgels his brain for an idea. He sits down before his typewriter and with much travail writes his little piece. It may be a short story or it may be a book. At any rate, he has created characters and moved them about to their appointed end, he has brought them into conflict and paired them off. He has made something out of his imagination that will thrill or shock or amuse or entertain. He is the firm base rock on which the whole amazing, gigantic, world-wide structure of the pictures is raised. Also he is the least considered and the most negligible factor in the whole enterprise. And that is one thing that is wrong with the movies.

Until the author comes into his own, until the man with imagination and a sense of dramatic expression is encouraged and brought into full partnership, the movies as an entertainment will never be brought to a level of artistic value much higher than the one they occupy at present. When the author has written his story it is printed as a book or in a magazine. As a participant in making the picture he then and there dissolves

Photographs from Paramount Pictures

A tent city to house 2,500 persons was built on the sand dunes near Guadalupe, California, while scenes were being taken for "The Ten Commandments." A street from the city is shown in the insert.

out of the situation. He rarely appears in the subsequent proceedings. There have been a few exceptions, but not enough to alter the general rule.

The motion picture rights to a novel, stage play, magazine story, or "original" are offered first to the scenario editor of a producing company. These editors at this period are nearly all women. The offer is usually made by an agent or broker. If the story appears fitted to the screen, the editor consults with the officials of the company, who decide whether they have an available director to "make" the photoplay and an available male or female "lead" to act it. The director is sometimes given a part in the consultation over the possible purchase of the story, and always the sales manager is brought in, since he will be held responsible for its commercial success.

After the story has been purchased, an "adaptation" of it is made—that is to say, it is synopsized and "treated" for picture purposes. It is in this "treatment" that the author is wiped out. Because of the lack of spoken words, almost every story must be "treated." Not always—in fact, not more than half the time—does the adapter do the continuity which follows. A continuity is an exact detailed description of what happens in each of the separate scenes which go to make up the finished photoplay. The best continuity writers go into such minute detail as to indicate in which way the lights and shadows shall fall upon the scene.

Each set must be described fully, likewise each outdoor "location." It is not unusual to have 500 different scenes on, say, 50 different sets described in detail by the continuity writer. This will give an idea of the patience and skill and exactitude necessary for this work.

Photographs from Paramount Pictures

Laboring to get spectacular effects in "The Ten Commandments," the camera men frequently toiled in the deep water, with white caps breaking near the cameras, as shown in the insert in the upper right.

When the continuity is completed, it is given to the director-in-chief. The art director, who must provide for the building of the sets, likewise gets a copy. So does the casting director, who must engage the minor players and extras. So does the "location man," who must find and engage the necessary outdoor locations, whether they be oceanside, mountain, jungle, deserted village, or a lawn or garden on a great estate. In some cases the leading players also receive copies of the continuity for advance study.

Actual "shooting" begins when the first set—whatever that may chance to be—is erected. For example, there may be a scene of some doorsteps and a door. Certain action described in scenes 21, 380, and 465 may require this set. It may also happen that in these three scenes the characters may be in evening clothes for the first, riding costume for the second, and in masquerade for the third. A very important young woman called a "continuity clerk" is the director's right hand in this sort of business, because she holds the "costume script" and must see to it that the players are properly attired for whatever occasion is being portrayed.

Usually a set is torn down for space economy's sake as soon as all the shots called for on that set are taken. But sometimes the players may be called away for other business and may be shot entering the doorway on May 1st and emerging from that same doorway (presumably five minutes later) on May 20th. The continuity clerk must see to it that the creases in the man's trousers or the bouquet in the woman's hand is absolutely identical with the first shot.

Exigencies may call the players from an interior scene in the morning to an outdoor location miles away in the after-

This country produces 85 per cent. of the world's supply of moving pictures in great plants like the Lasky studio at Hollywood, California

noon. So that while there is exact continuity in the script, there is an utter lack of continuity in the actual photographing of the various scenes. This is a matter calling for expert assemblage of the celluloid strips later on.

As each shot is made, an assistant cameraman holds up before the camera a sign bearing the number of the scene. In this way they are identified for cementing together later. Frequently two or three cameras shoot the same scene from various angles. These exposed films are immediately developed and printed and within a few hours are projected for the scrutiny of the director, so that he may be sure he has the desired effect and likewise may be sure that his scene actually registers before he gives orders to destroy the set on which it was taken. These short bits of film are called "rushes."

When every scene called for in the continuity has been shot, the film is cemented together in its proper order. The average feature picture, as finally shown, contains about 6,000 feet of film. When first assembled in the rough form here described, however, it probably contains between 12,000 and 15,000 feet of film. This is first viewed by the director, the title writer, who must apply the printed legends, and the cutter, whose work it will be to reduce the footage and yet retain the interest. It is a long and difficult job to reduce 15,000 feet to 6,000 and to insert the titles at their proper places. Those involved in it frequently work day and night. In the case of a certain "special" picture more than 100,000 feet of film had to be cut to about 12,000, although this is an unusual occurrence.

While all this work is being done (rarely taking less than a month, in the case of an average picture, and sometimes a year for a big super-production) other activities are afoot. The publicity and advertising departments of the company which will distribute the picture have been engaged in getting ready their advertisements, posters, "still" photographs for lobby displays, and newspaper reading notices; and the distributing company's

How the movie industry has grown to stupendous size in a few years.
This is the Metro-Goldwyn-Mayer studio at Culver City, California.

salesmen, radiating out from the thirty-two "key cities" which dot the country, have been "selling," which really means signing contracts for leasing, of the picture to the exhibitors or theater owners who will show it upon their screens.

Sometimes the distributing corporation is the same as the producing corporation, but this is not always the case. Where it is the case, the work is smoother and more co-related.

When the picture is finally finished at the studio and has been passed by the director in charge, it is still one single negative. From this a large number of positive prints must be made. The positive is, of course, the print you see upon the screen. The number of prints made varies. For "Peter Pan," which showed simultaneously in a great number of places last Christmas week, 165 prints were necessary because of the simultaneous showing. Generally about half that number would be sufficient.

The salesmen who have obtained contracts from the local theater owners throughout the country have likewise arranged with the exhibitors certain "play dates," and on the morning of the play date the six reels of 1,000 feet each, which go to make up the completed picture, are delivered in a metal container to the theater. Previous to this, the exhibitor has received a "press sheet" from the distributing company containing advertisements and news items which he can place with his local papers if he so desires. He has also received posters for the front of his house and photographs for his lobby. In the case of all pictures of any importance, he has likewise received a "music cue sheet," which indicates to his orchestra or organist fitting melodies to accompany the showing of the picture. All of the large producing and distributing organizations have musicians who "score" these pictures.

The projectionist of a motion picture theater now has two projecting machines, so that there need be no stop, as there used to be in the early days at the end of a reel. He loads his machines with reels 1 and 2 and starts reel 1 going. Certain warning signs tell him of the ap-

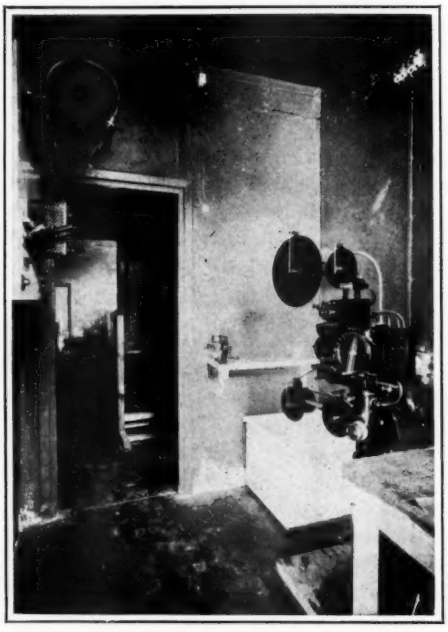
Young aspirants for Jackie Coogan's fame appear in droves, and the casting director at the Lasky studio receives them as shown in this picture.

proaching end of reel 1 and he switches on the other machine with reel 2. So smoothly is this done that the spectators do not know it. Next he puts reel 3 on machine 1, and on a couple of spindles in his booth "re-winds" reel 1 and places it back in its metal case. All the larger theaters, however, have two operators to handle the machines and a junior to do the re-winding. It takes about twelve minutes to complete the projection of a reel, although it may be run at a faster rate, in which case the printed sub-titles, if they are lengthy, do not remain on the screen long enough for the slow reader in the audience.

When the theater is through with the film, it is sent back in its container to the distributing "exchange" (provided the showing is in one of the "key cities") or else is "picked up" by an agent of the distributing company and carried on to its next destination.

The people engaged in all these proceedings and operations are of many types and have varied backgrounds. The movies have proved to be a great resort for newspaper men. A survey of the industry brought to light that no less than 721 former newspaper writers are engaged in various capacities in the motion picture industry, some of them holding positions of importance.

R. H. Cochrane, Vice President and General Manager of Universal, was a managing editor in the Scripps-McRae newspaper service, and his brother, P. H. Cochrane, secretary of the same company, was a colleague in the news-



The printing room of the Metro-Goldwyn-Mayer studio, showing some of the intricate apparatus.

paper field. Winfield S. Sheehan, Vice President and General Manager of Fox Film Corporation, was a reporter on the New York *Evening World*, and Edwin C. Hill, advisor to the Fox production department, was on the old morning *Sun*. E. Lloyd Sheldon, Production Editor in the East for Famous Players-Lasky, was a morning *World* man and so was A. M. Botsford, advertising manager. John C. Flinn, Vice President of Producers Distributing Corporation, is a graduate of the old New York *Herald*.

Courtland Smith, Secretary of the Hays Association, formerly headed the American Press Association. Joseph Jefferson O'Neill, Editor of the Hays group, left the *World* to join that organization. Kirk Russell, another aide of Hays, was a former newspaper cartoonist.

In the field of adapting stories to the screen, newspaper men have played a part. The continuity for the "Covered Wagon" was written by Jack Cunningham, once with the *Evening Sun*. "When Knighthood Was in Flower" and "Little Old New York" were adapted by Luther Reed, formerly of the *Herald*. Newspaper women have done well likewise in this work. Their leader perhaps is Frances Marion, who adapted "Abraham Lincoln" and "Humoresque."

A writer-director, who once was a newspaper man, is Rupert Hughes. A grotesque comedian of note, Larry Semon, drew cartoons for the *Evening Sun*. Nearly all the work of advertising, publicity, and exploitation is in the hands of former newspaper reporters.

The screen is developing its own players. It would appear that more actors and actresses who reach positions of stardom or the next highest rank, that of "featured player" (which means one who gets his or her name on the posters or other advertising), are developed in the motion picture studios than are drafted from the speaking stage.

Going through the biographies of 190 actors and actresses who achieved the rating of star or featured player within the past three years, I learn that 106 are the products of the studios, in most cases having begun as extra men or women, and that 84 had previous legitimate stage experience.

Those who came from the legitimate stage naturally enough received important parts in motion pictures very much sooner than those who worked their way up through the movie ranks. But there is no especial dominance of studio-trained or stage-trained men or women in the uppermost stratum of the movie ranks.

For example, among the outstanding stars, Gloria Swanson and Norma Talmadge began as extra girls and worked for years to achieve their present places. So did Colleen Moore, although her period of apprenticeship was rather brief. Betty Bronson is the only one who became a star overnight—when Sir James Barrie picked her to do "Peter Pan."

Among the men, Fairbanks, at the top of them all, is a product of the speaking stage. Conway Tearle, a featured player, likewise acted upon the boards. Chaplin was a vaudeville performer. Yet, on the other side, Harold Lloyd was an extra boy, Tom Mix a trick riding cowboy, and Rudolph Valentino a ballroom dancer.

To go to Hollywood and see all of these people engaged in their activities and processes is to be disillusioned. Last year one of the Hollywood directors went to the Far East with a company to make a picture. In Siam he was treated with distinction and given a palace. One night at a great party an old prince of the royal family called him aside. "Tell me," he said softly and confidentially, "is this Hollywood the hot stuff they all say it is?" The director had to tell him that the picture colony wasn't a bit like what he thought it was. The old prince had been bamboozled, as everybody else has been. Hollywood is just a *bourgeois* community, a settlement of middle class people living according to middle class standards under almost ideal physical and climatic conditions. When I tell you that all of the restaurants in the town, except one, or perhaps two, close at nine o'clock and that all of them have

high chairs for children and that these chairs are in nightly use, you get an idea of the "night life" of Hollywood as it is publicly displayed.

One of the baffling mysteries of the motion picture industry is why, until recently, the producers and exhibitors should have spent so many hundreds of thousands of dollars exploiting and exaggerating the wickedness and iniquity of the players and the plays. It cost them fortunes to make themselves out worse than they were.

Now they are spending other fortunes to overcome and erase the bad impression they paid so much money to produce. Never was a more curious phenomenon. No industry was ever worse served by its publicity and promotion agents. Their exploitation has been highly successful in the sense that it has made the names of some of the principal players known, not only throughout this country but all over the world. When Tom Mix or Fairbanks or Chaplin or Jackie Coogan go abroad they stop the traffic. Children in Buenos Aires and Santiago de Chile know about the foibles and habits and the familiar intimacies of their favorites, just as boys in this country know the major league players.

But Hollywood has been invested with a glamor and wickedness it does not possess, and, most incredibly, many producers and distributors have shown a really diabolical ingenuity in besmirching their own pictures. This sort of thing:

> Imagine the screen's most gorgeous personality as a silken gold-digger trading her caresses for jewels and Rolls-Royces. Escaping untarnished till her charms, like all rare goods that men handle too freely, sink to the bargain-price class. Imagine the punch, the gowns, and best of all, the profits.

Or this:

> The tale of a mother who, herself the mistress of a roaring night life café, placed her pretty daughter with a rich family to be brought up respectably. When the daughter starts hitting the pace that kills, when the butterfly faces her moral crisis in her own mother's café, here are thrills, here are heart throbs such as audiences seldom see.

These quotations are bait set before the exhibitor by the producer. They represent the motion picture business at its worst. Some of the exhibitors descended just as low. Some of the specimens of their publicity would not bear reprinting in this magazine. But here is one. "Abraham Lincoln" is concededly one of the best pictures the industry has ever produced. It was advertised by an exhibitor in Detroit in these terms:

> A Great Smashing Romance Built to the Speed of Every Flapper in Detroit!
> It's a Collection of Heart Broadsides!
> A Wallop in Emotion! A Tale of Love Adventure Despite Its "High Blown" Title
> That's Going to Hand Every Maiden
> In Detroit the Shock of Her
> Sweet Young Life!

Such salacious, suggestive, and dishonest advertising is now under the ban. Pressure is being put upon the producers and exhibitors who have employed such methods. It is extraordinary that it should have been necessary. Drastic measures have been taken to supervise the personal morals of players, directors, and other exploited personalities. They are simply eliminated from the industry and nothing said about it. One of the most highly exploited and widely advertised directors has just gone out like a candle. It is good business. It is perfectly well known in the New York and Hollywood studios that there is no place in the screen business for a player who becomes involved in an open scandal.

Will Hays has put in operation the new publicity that is called the "Open Door" policy. Let him explain it:

> Last March we concluded the establishment of the Open Door policy. I should like to make clear to you just what that phrase, "The Open Door," means. It means the most cordial and sincere sort of invitation to the public to come to us frankly and unhesitatingly with constructive and helpful suggestions and advice.
>
> It may have been at one time the policy of some great businesses to bar the public from any knowledge of their inside workings, to assume the attitude that it was none of the

public's affairs how those big businesses were conducted, but enlightened industry has discarded any such position and has adopted the attitude that the public must be pleased. We of the motion picture industry have gone the whole route. We want you to come in and tell us where and why we are not—if we are not—measuring up to our job of making the motion picture the force it should be in promoting the best American ideals.

For the purpose of receiving your constructive suggestions and advice, we have established the Department of Public Relations in our office, developed from the coöperation of the Committee on Public Relations, which recommended it.

We invite every organization in this country or elsewhere which is interested in public betterment, to designate some authoritative representative who will be its point of contact with the film industry. If there is any public service institution in which the American public has absolutely definite rights and to which it should have free access, that institution is the motion pictures—and I think it will be agreed that we are of public service and that we are an institution.

After all is said about the conduct of this industry, its lapses of taste, its mistakes, its progress, and its gradual settling down to a stable basis with its present attempt to establish ethical and moral and financial standards, there remains unanswered the secret of its world-wide appeal. The pictures made are essential nationalistic and a reflection (often distorted) of American life, yet their appeal is as strong in Europe, Asia, Africa, and Australia. The export manager of one of the big producers writes:

You ask what sort of pictures are sent abroad. The foreign market receives the identical product that is released here in the States. We send all our product to practically every country of the world. The answer is, of course, that the American audience is a mixed one. You will find representatives of every nation in the world in almost every audience. If a picture pleases the American fans it is almost certain to please abroad. Our experience, particularly with the bigger pictures, is that they are accepted with the same enthusiasm in the Orient as in Latin America and in England and Australia as on the Continent. A good picture in America is a good picture abroad.

The English market is virtually the same as the American, except that they do not seem to be enthusiastic over Western subjects. The same holds good for nearly all of the European countries. The Teutonic countries are very partial to artistic subjects—character delineations instead of swift-moving action stories that are so popular here. Latin America is more partial to sex stories and society dramas containing plenty of intrigue, beautiful women, and beautiful clothes. The Orient is almost without exception partial to action and mystery stories. This, of course, is due to the fact that so many of the fans are unable to read or write and understand only the basic emotions. That is why the serial is so popular in this part of the world.

We make very little attempt to re-edit pictures for the foreign market. They are sent just as released here in America and we leave it to the manager to make such changes as he feels are in order so that the subject will be more acceptable for his country. Our translators, of course, edit the sub-titles, but we seldom touch the picture itself.

Will Hays says that censoring and reforming the movies has become the great indoor sport of the United States.

What is there about the motion picture business that makes each of us sure we could improve it over night if we had an opportunity? Is it because the youth of the industry has delayed the fixing of standards? Does its very contemporaneousness inhibit respect and admiration for the pioneers who risked, and often lost, their fortunes in developing the idea?

I rather think the underlying reason for the clamor for reform in motion pictures lies in our own real and personal interest in them as a means of entertainment, education, and relaxation. Possibly those of us—and we are counted by the millions—who use them in these capacities have made them a part of our own equipment and have appropriated to ourselves a right to criticize those things which we own and habitually use.

Whatever the reason for the criticism, the industry replies with considerable satisfaction that its offenses are insignificant in the light of its achievements in the twenty-five years of its life. The movies will become just what the customers want them to be. They must be made for the millions and not for a selected group.

The Kind of Ministry We Need

By HARRY PRATT JUDSON
President Emeritus, The University of Chicago

In an article entitled "Where Do We Get Our Preachers?" in the May issue of the World's Work *Rollin Lynde Hartt made some criticisms of the type of instruction offered in many theological institutions and of the kind of students they attract. Dr. Judson more or less summarizes Mr. Hartt's point of view in the first paragraphs of his article and comments upon it.*

COMPLAINT is made of the schools of theology—all education in these days seems to be under the microscope. Theological schools, it is said, do not teach theology in the larger sense—they are inadequate in training their students to be thinkers, to understand the vast changes in thought which science has brought—they are behind the times intellectually—they draw in mediocre young men by the offer of financial aid—the pulpits are manned by graduates who do not compare with those trained in medicine or in engineering. Then, too, the churches are getting into politics and the ecclesiastical leaders are on the whole of too small mentality to guide the churches wisely. If divinity schools should be put on a modern basis, in short, a higher class of students would be attracted to the ministry. Mr. Hartt adds:

> Such men will not arrive in great numbers. The fifty seminaries that now have only twenty-five students apiece will close their doors and cease darkening the world. The best seminaries will survive. They will send out fewer graduates and better. Consequently, there will be fewer churches and better. Perhaps there will be fewer denominations; for, when it is no longer possible to obtain cheap ministers, rival sects will be less able to compete. Meanwhile the surviving seminaries will prosper amazingly. Income from tuition and rent, along with the money now lavished in purchasing students, will give professors sabbatical leave and retire them when superannuated. It will finance modern libraries. It will enable a seminary greatly to broaden its curriculum, calling in distinguished specialists as lecturers. All this will be accomplished when every form of "aid" is abolished.

Perhaps this is an accurate picture of future possibilities. But one wonders whether it takes in all the facts.

To begin with, the purpose of a good theological school and that of a good medical school, for instance, are radically different.

Theological schools presuppose organized church bodies, and churches centered around rather definite religious doctrines. The purpose of the schools is to provide leaders for these organizations, who shall expound and advocate these particular tenets. A Roman Catholic Church can hardly be expected to have a priest in charge who disbelieves in the papacy, a Methodist Church would not be likely to call a convinced Calvinist, a fundamentalist Baptist Church would not be edified by a Unitarian as pastor. If the preacher alters his view it is usually he who changes and not his church. In any event the graduate in theology would usually have a scanty future unless he might expect a place in some one of these church organizations.

In a scientific medical school, on the other hand, the student looks to no organized body for support. He expects to build up a personal practice, which he may develop by his individual skill, or at all events by the general belief in it. Therefore it is the aim of the school to give the most advanced training in medical science. The professors are free to drop any scientific theory if some other is proved better, to adopt radically new principles if they are only shown to be sound. In science there is no heresy. Of course, one remembers certain schools

of cure which are discordant with approved scientific doctrines, but after all the great medical schools are alike in looking to the future, while schools of theology as a rule look to the past.

It is only the exceptional medical school, and generally only with the exceptional student, that research—the quest for new truth—is made prominent. The school of music trains students to perform, and perhaps to teach others to perform, but not often are composers produced. The normal school aims to train students to teach what is known—they rarely try to extend the boundaries of substantive knowledge. But nevertheless any result of the industry of these exceptional minds is always welcome when shown to be good—there is no real heresy in science, and only in a fantastic way in art. Further, any new theories in science or art must stand or fall on their own merits. Orthodoxy there may be, but very remote in character and application from theological dogmatics.

Now the trouble is that these theological graduates are supposed, or at least permitted, to teach not merely the theology, such as it is, in which they are trained, but almost anything else which comes into their young heads. They may pose as authorities on anything whatever, at all events anything which does not conflict with their theological norm. Of course young seminary graduates are apt to cause some amusement to serious, mature thinkers. But nevertheless they preach and teach with little limit. A teacher of mathematics, except in a very elementary way, seldom attempts to teach Latin. But the preacher passes judgment not only on faith and morals, but also on metaphysics, on psychology, on sociology—whatever that may be—on history, on literature, on international politics, on the conclusions of science. He is a sort of vocal universal magazine.

But all this is needless.

What a given church usually wants is a religious leader, one who will defend in an interesting way the accepted church doctrines, who will carry on the more or less numerous church activities, who will be of use in time of trouble, who will visit the sick and console the dying. The innumerable small churches throughout the country will continue to exist and will seek clergymen who will do reasonably well all these things. The schools in which young men are prepared for such duties are hardly to be compared with an advanced scientific medical school, but rather to a military school, whose students are already in the service and are to a greater or less degree on salary already.

Ideally, it might well be better if there were only a small number of highly trained preachers, of wide knowledge and independent character, who have been taught to think soundly and to speak well. But that would involve the disappearance of a large number of small churches, the disappearance of not a few religious denominations. All this might be desirable, but as human nature is, no such consummation can be expected. Religious sects are marvelously persistent. The union of any two is quite apt to result in a scission which forms more than those which disappear.

In point of fact those theological schools which are nearest the basis of independent thought, those which are most advanced, most modern, or whatever they may prefer to be called, are merely training for a limited constituency. They still depend on placing their graduates in churches with a body of doctrine, perhaps more elastic than some, but still sharply differentiated from many churches with another body of doctrine. These graduates are by no means independent practitioners. They are, and must be, servants, not masters.

It is true that of late years our traditional sharp separation of church and state has become somewhat blurred. One famous old church has had no little criticism on the ground of seeking public funds for some of its beneficent functions. But other churches which have had much to say as to this, have themselves trenched far more on state affairs. They have as organized bodies brought pressure to bear on the making of law. They have used methods of attack on lawmakers which

savor more of worldly wisdom than might be expected from the children of light.

Moreover, they have entered disputed realms of social conflict. They have passed grave judgment on questions at issue between employers and employed, questions involving intricate details of business and economics. Being asked what qualifications for such technical investigation a body of ministers might be supposed to have, the reply is that of course they were guided by the study of a committee of experts. But who were qualified to select the experts? And as a matter of fact were the alleged experts already committed to a given view on such matters, and their alleged study little more than the formulation of preconceived opinions? *Sutor, ne supra crepidam* [let the cobbler stick to his last].

Theological education which trains a small group of able men to the highest intelligence in religious questions, and fits them to deal with such questions effectively for the instruction and inspiration of thoughtful people, is of course of the highest value. From such selected students will come the great leaders of religious thought, the great scholars of ecclesiastical history and doctrine, the intellectual guides of an intellectual laity.

But there remains a wider field. There are churches, many of them quite small, which are not looking for education to a larger outlook—they, so far as theology is concerned, are content with confirmation in their already settled convictions. As has been said, they want comfort in trouble, advice in difficulty, guidance in moral perplexity. All this can be had from a clergy very slenderly equipped with metaphysics, economics, or physical science. Such a clergy will be provided, in one way or another. As an army is officered from military schools the parishes will be provided from some sort of church schools—with more or less aid for the indigent, no doubt. Churches rarely die, and sects are likely to remain.

But it would surely be a vast improvement if the churches—all the churches—should keep out of politics. It would be better if the ministry should devote their efforts to personal religion, to the betterment of life and character—for religion is life. A clergy on the whole useful in this field is hardly equipped to lead popular movements involving great economic and legal issues. The temptation is great—to be conspicuous, to pose as reformers, to win applause in crowded gatherings—all these are attractive. But wisdom is quiet—far removed from ecclesiastical fuss.

The Forgotten Orator

A Review of the Biography of Edward Everett, Who Spoke at Gettysburg With Lincoln

By CAMERON ROGERS

ON THURSDAY, November 19, 1863, the great assembly that had gathered among the new graves of the dead of Gettysburg were "held literally enthralled" by the oratory of Edward Everett of Massachusetts. The quoted phrase is Paul Revere Frothingham's,* the author of the first definitive biography of Edward Everett, who was a little more than half a century ago considered one of the half-dozen illustrious living Americans. For two hours, then, the polished periods and cultured crescendoes of Mr. Everett enthralled a notable audience. And then the gaunt Abraham Lincoln of Illinois, President of the United States, appeared on the platform and in less than ten minutes he

* "Edward Everett, Orator and Statesman." By Paul Revere Frothingham. Houghton, Mifflin. $6.

had made his "few appropriate remarks," to be reported next day in an obscure and unheralded position in the press, while the Gettysburg oration of Edward Everett was blazoned upon scores of front pages.

To-day who remembers the oration and who has not the "few appropriate remarks" almost by heart? Indeed, how many know that Everett of Massachusetts was the principal speaker at those dedicatory exercises? Very few, and by a cruel twist of circumstances the memories of Everett's other excellencies are also becoming dimmed. It begins to seem possible that after all he may have been only a most brilliant mediocrity.

Daily Tribune.

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EDWARD EVERETT'S ADDRESS.

THE FORGOTTEN ORATOR AND HIS GREATEST ORATORICAL EFFORT

After the dedicatory exercises at Gettysburg Everett wrote Lincoln: "I should be glad if I could flatter myself that I came as near the central idea of the occasion in two hours as you did in two minutes." To which Lincoln replied: "The whole discourse . . . will be of great value . . . there were passages in it which transcended my expectations." The North received Everett's remarks as a great oration, and this fragment from the New York *Tribune* of November 20, 1863, shows also that applause followed virtually every sentence of Lincoln's speech. The drawing of Everett shown in the insert was made from a contemporary picture in Frank Leslie's *Illustrated Weekly*.

Still, brilliant he certainly was. Consider a brief tabulation of his achievements. Born in 1794, he entered Harvard at the age of thirteen, was graduated at seventeen, and made the Phi Beta Kappa oration of his year. He confounds us with his erudition and oracular powers by dominating from the pulpit at nineteen the Puritan gentry who flocked to the church in Brattle Square to hear him. Scarcely beyond his minority he goes to Europe, where he converses with Byron, dines with Scott, and is somewhat coldly received by Goethe. At twenty-five he is Professor of Greek at Harvard, at twenty-six editor of the *North American Review*, at thirty-one a Congressman from Massachusetts and the *alter ego* of Webster, and at forty he is the Governor of Massachusetts. A full twenty-odd years. The ensuing twenty saw him President of Harvard, Ambassador to Great Britain, Secretary of State, and United States Senator. At seventy-one he was dead, full of honors and successes, and now, sixty years later, he is remembered by the average American as hardly more than an estimable public character who was a prominent citizen of Boston.

It is not difficult to assign a cause for this passing of a fame that in its day was with some reason considered immortal.

There seems to be but one. Everett lacked the supreme alchemic touch of genius. Like Abraham Cowley, who astonished England with the brilliance of his intellect when in his early 'teens and is now recalled only as a poet of unconscionable dullness, the Massachusetts statesman, harnessed to the standards of his time, possessed no kindred contact with the generations that preceded him nor with those that have come and gone since his death. Excellent in his time, he has passed into the limbo of forgotten and forgettable things, although an undesirable fellow named Whitman whose scurrilities were labeled by Mr. Everett "a most unimaginable compound of nonsense, mysticism, the lowest materialism, and the most vulgar bestiality" still continues successfully to challenge interest and fame.

Yet there is nothing undistinguished about Everett's record as a statesman, though from the assay of history his services have failed to emerge as of dominant importance. As American Ambassador to Great Britain he was beloved and admired alike by the diplomats and by the wits, perhaps because in the England of that day the diplomats were wits and not a few of the wits diplomats. Sydney Smith held him in affectionate esteem as did Samuel Rogers, and such men as Sir Robert Peel and Lord Aberdeen were glad to entertain him for the pleasure of his courteous presence and brilliant conversation.

While the guest of the Duke of Rutland at Belvoir he was one of a shooting party given in his honor, because it seemed to be generally believed that as an American he must be an excellent shot. Everett's actual experience with guns and game was so slight as to make even the process of loading an impenetrable mystery. In his account of the day's shooting, written to his father-in-law in Boston, he displays a sense of humor that is infinitely refreshing to us. Lord Granby, his mentor, was, of course, a skilled shot and a past master of the somewhat difficult art of the shooting of driven bird, and though he left the pick of every covey to the American he must have been astonished at the consistent failure of the latter even to disturb the equanimity of the marked game. Finally the head keeper started a hare.

> "Now's your chance, Mr. Everett," says Lord Granby. "A hare, sir, a hare," cries the head keeper; "Move forward, sir; now Frolic [the dog's name], draw, draw—mark, sir;" and sure enough a hare springs out. I could have hit him with my hat. I fired. "Dead!" cried the keeper. Dead quotha! Never did I see a hare scramble out of a potato field at such a rate. . . . That he is stopped yet is more than I should like, in the absence of all testimony, to aver.

There is none of the pomposity here of which Whittier had accused him on the occasion of his inaugural speech as Governor in 1836.

His first visit to England had been in 1815 at a time when the country was greatly disturbed by the news that Napoleon had returned from Elba and that the Allies were menaced by a force of unparalleled strength. Everett had called on Byron and the poet, then at the height of his fame, had confidently predicted that the Corsican would "drive the Duke of Wellington" and had also been at some pains to observe that he hoped he should "live to see Castlereagh's head carried on a pike under his window."

In Edinburgh he called to pay his respects to Scott and went later to dine with him and his family. Among the company at dinner were, we are told, "three dogs—all of them of great merit and treated with attention. The hairs on my blue pantaloons will testify that I did my share of civility to them. The cat came in to dessert; and took post upon a side table. After the ladies retired, she came upon our table . . . "

How delightful a description is this of Sir Walter's table: "Three dogs—all of them of great merit and treated with attention."

In Germany whither he went to study at Göttingen, he betook himself to Weimar and with his friend Ticknor waited upon Goethe. Here, alas, the visit was not so pleasant. The great man was, according

to the young Everett, "very stiff and cold, not to say gauche and awkward. His head was gray, some of his front teeth gone, and his eyes watery with age. He . . . talked low and anxiously . . . however, with no interest on anything."

After this continental sojourn Everett returned to Cambridge to become, at twenty-five, the Professor of Greek at Harvard University. His tenure of the chair was not long, for with the gift of oratory, to our ears somewhat marred by floridity, and the activity of a mind undoubtedly splendidly equipped, politics and a career like that of his friend Webster were bound to exercise an appeal. Emerson, who worshipped Everett, describes him as he appeared to his manifold admirers at this period:

> His radiant beauty of person, of a classic style, his heavy large eyes, marble lids which gave the impression of mass which the slightness of form needed; sculptured lips; a voice of such rich tones, such precise and perfect utterance, that, although slightly nasal, it was the most mellow and beautiful and correct of all the instruments of the time.

As a Congressman and later as Governor of the Commonwealth, Everett added not greatly to his popularity and fame. Abolition had many powerful friends in Boston and in Massachusetts and the admonitory wisdom of Everett touching the violence of its expressed opinion helped him little.

The Ambassadorship to Britain was, after all, his happiest achievement, for, following it, as President of Harvard, he was beset with a multitude of small irritations that wore away his temper and his strength. And, in all justice, it must indeed have been a trial to such a man to be forced to include among his duties the scolding of students for whistling in the corridors or for failing to touch their hats to him, though his resentment at this last omission was typical of the harassed state in which he then found himself.

As Senator it was a piece of bad luck that robbed him of satisfaction in his office. Ill health drove him in the early hours of the morning from the Senate Chamber where debate upon the Nebraska Bill was in progress and when it seemed impossible that a vote on the passage could be taken till next day. The vote, however, was taken and Everett's name was not upon the honor roll of those Senators who had voted against it, though he was the known champion of the opposition, not only to it but to slavery as a whole.

Always sensitive to attacks, the unjust assaults upon his integrity that fell about his head after this incident dispelled both his peace of mind and a health already fragile. As a private citizen, nevertheless, he continued to hold a preëminent position in national life and the proof of his tremendous fame as an orator was his being chosen to make the Gettysburg address. It was considered a magnificent speech.

If there may be such a thing as superlative mediocrity, Everett fulfilled its functions. Judged by the standards of ordinary men, he was an extraordinary man: a great scholar, an able statesman, an excellent orator; but somehow he never reached the ultimate peak of excellence in any of these things. In 1860 there was hardly an educated man in the East who did not consider him Lincoln's superior, even as he himself at one time considered Seward Lincoln's superior, yet history to-day hardly measures the two men by the same cosmic yardstick. In the annals of American endeavor he stands as the distinguished public citizen, which, indeed, he was, but his is not the stature of men whom, in his time, he far outshone in popularity and success.

Mr. Frothingham has been an enthusiastic and admiring biographer, yet active in perception and a certain subtle analysis. His method is the ancient and honorable one, appreciation for his subject and decorum in his treatment thereof. He indulges in no clever disrespect or cynical exposure, and we are grateful to him for it. We see Edward Everett as an admirable gentleman to whom it was after all a shabby trick to deny the indefinable ingredient of genius.

Building and Loan a Great Savings Institution

Every month in this part of the magazine the WORLD'S WORK *prints an article on investments and the lessons to be learned therefrom.*

THERE are few documents that contain more matter of interest for the investor and the student of economic progress than the annual reports of Mr. H. F. Cellarius, secretary of the United States League of Local Building and Loan Associations; and there are probably few equally valuable documents that receive less public attention. A reading of the first paragraph of Mr. Cellarius's latest report will give some idea of the importance of the subject:

> The building and loan associations of the United States set a new high record of achievement last year, when they increased their assets over $822,000,000 and added to their membership roll 1,351,000 new members. No class of financial institutions has during the last decade developed a more rapid growth or exerted a more beneficial influence upon the civic and economic life of the nation. These associations now hold a most important place in the financial structure of this country and are doing more than any other agency in promoting the saving habit and providing the means for the securing of homes. They are essentially community builders and creators of taxable wealth, practically all of their funds being devoted to home building or home owning purposes. Their loans, secured by mortgages upon these homes, are admittedly the best and soundest security in the whole realm of investment. The savings of investing members, protected by this class of security and further safeguarded by state supervision in most of the states, are not only safe but are not subject to fluctuation in value as is the case with other stock investments. Besides, the return which building associations' members receive by way of dividends is much better than that obtainable from any other source with equal safety.

America may be installment mad and riding for a fall in that direction, but every installment payment that goes toward the purchase of a home strengthens the social and economic fabric instead of weakening it. The $1,460,000,000 loaned by building and loan associations last year for the buying and building of homes was largely supplied by thrifty investors who are using this convenient medium for the accumulation and investment of savings. Both investors and borrowers make monthly payments of savings to these associations and through this agency some 400,000 homes were acquired last year on which the mortgages will be paid off in the next ten to twelve years.

Mr. Cellarius's statement that these associations are doing more than any other agency in promoting the saving habit is supported by statistics. The growth in number of depositors in mutual savings banks from 1914 to 1924, as shown by the report of the Comptroller of the Currency, has been something more than two million, or a little more than 25 per cent., and growth in deposits $2,777,690,000, or 70 per cent., while growth in membership of building and loan associations during the same period has been nearly five and a half million, or 175 per cent., and growth in their assets $3,408,229,000, or 251 per cent. Growth in building and loan assets last year was twice as much as in mutual savings banks, while growth in their membership was four times as great. This indicates that building and loan associations may soon surpass mutual savings banks in financial importance. At the end of 1924 there were 10,409,776 depositors in mutual savings banks, with aggregate deposits of $6,693,246,000, against 8,554,352 members of building and loan associations with assets of $4,765,937,197.

Mr. Cellarius has gathered facts show-

ing the losses in building and loan associations due to failures and has compared these with losses in other forms of financial institutions. During the last five years there were thirty-nine failures of building associations with a total loss of $769,084. During the year 1924 alone there were 699 failures of state commercial banks, with a loss of $182,136,000; fourteen failures of loan and trust companies, with a loss of $23,868,000; twenty-three failures of stock and mutual savings banks, with a $11 708,000 loss; and thirty-one failures of private banks, with a loss of $5,476,000. As Mr. Cellarius says, this makes "a most remarkable showing and is a wonderful tribute to the safe and careful management of the building and loan associations of this country." The percentages of losses to total resources of these various classes of institutions, as given by Mr. Cellarius for the last four years, are as follows:

PERCENTAGE OF LOSSES TO TOTAL RESOURCES

	1921	1922	1923	1924
B. & L. Asscs. .	.0032	.0047	.0030	.0084
Savings Bks. . .	.0410	.0280	.0640	.1260
Loan & Trust Cos.	.8010	.2070	.0290	.2310
State Com. Bks. .	.1750	.5590	.3800	1.2930
Private Bks. . .	1.6790	1.6170	1.3520	3.6280

The jump in the percentage of building and loan associations last year was due to the failure of twelve institutions in Ohio with total losses of $275,800. In these pages last October attention was called to the fact that professional promoters were engaged in that state in organizing such associations. The professional promoter has no legitimate place in the building and loan field, and Ohio now has a law which prohibits the employment of agents on a salary or on commission to sell building and loan stock in that state; nor can any Ohio association now charge initiation or membership fees. Mr. J. W. Tannehill, superintendent of building and loan associations, in his report to Governor Donahey for 1924, said:

"In the two years previous to the enactment of the King law, 278 new associations were organized. The stock of most of these new companies was sold by professional promoters who had no interest except to reap a harvest on commissions. The King law put an end to these professional sales and cut off the supply of 'easy money' with which many of these associations had been paying a high rate of dividends." It seems remarkable that only twelve have failed, but Mr. Tannehill says, "Some have been consolidated with other associations, some have voluntarily liquidated, and a number have had their charters cancelled. The others, with a few exceptions, have, by strenuous efforts, succeeded in establishing themselves on a firmer footing and will, no doubt, if they strictly follow the law, rapidly develop into strong, successful associations."

Mr. Tannehill sees another menace to investors growing up in the mortgage field in Ohio and what he has to say about it applies to similar concerns in many other states and should be heeded by investors:

> There are springing up over Ohio a vast number of companies, incorporated or otherwise, which seek to engage in various forms of speculations in real estate mortgages and mortgage bonds. These mortgages range from good to questionable second and third mortgages and many that are practically worthless. These mortgage concerns have absolutely no state supervision. Hundreds of them are selling mortgage bonds on the installment plan contrary to law. The first serious decline in land values in our cities will force hundreds of these concerns into bankruptcy and cause the loss of millions of dollars to Ohio investors. . . . There are safe, conservative mortgage companies in Ohio, but it's about time the state sorted the many goats out from these few sheep.

Ohio investors have long known the advantages of building and loan shares. Mr. Tannehill aptly remarks that about the only people in Ohio who are not to-day stockholders or depositors are men of great wealth who control banks and men of small income who control automobiles. There are more than a million and a half building and loan members in that state. In other states these institutions have not taken root as rapidly, but it would be well for investors in all states to become better acquainted with this medium for saving and investing.

Stocks and Bonds for a Widow

On this page each month will be printed practical suggestions to fit the needs of particular classes of investors.

IN CONSIDERING common stocks as long term investments in these pages last month reference was made to two letters received from WORLD'S WORK readers who indicated a preference for stocks. The case of the New York business man who had accumulated a surplus of $7,000 was treated fully in the July issue. There was not room to give consideration to the problem of the Western widow and her daughter who had become greatly disappointed with their bond and mortgage investments and wished advice regarding the employment of $25,000.

Their inquiry was as follows:

A widow and daughter wish to ask your advice about investing $25,000 in stocks or bonds, from which they would hope to receive 6 per cent. or better. In submitting suggestions you may wish to know that their total wealth is about $100,000 with investments as follows:

$10,000 American Tel. and Tel. at 9 per cent.
5,000 North American Co. 8 per cent. in cash
5,000 International Cement 8 per cent.
25,000 A local Building and Loan Association 5½ per cent.
20,000 1st mortgage farm loans with very little return at present
3,000 Illinois Central 7 per cent.
2,000 Chicago, Milwaukee & St. Paul—no return
5,000 French 7s due 1949 bonds

They had understood that bonds were one of the safest forms of investment, so put $5,000 into French bonds just before they dropped in price. From their experience they are afraid of bonds or railroad stocks, and of course farm mortgages have been a disappointment to nearly every one the last few years. They have read your articles in the WORLD'S WORK with great interest and your advice will be greatly appreciated.

To this the Investment Editor replied:

For the investment of $25,000, it might be well for you and your mother at this time to put about half of this sum in comparatively short term high grade securities and the other half in the common stock of industrial companies that seem to have good business prospects ahead of them. For the bonds we would suggest such issues as:

Western Union 6½s due 1936
Kingdom of Denmark 6s due 1942
Pacific Gas and Electric 1st and refunding 6s due 1941
American Waterworks and Electric 5s due 1934
American Chain debenture 6s due 1933
Armour & Company 4½s due 1939
Bethlehem Steel Pur. Money 5s due 1936
Kingdom of Norway 6s due 1943
Kansas City Gas 1st 6s due 1942

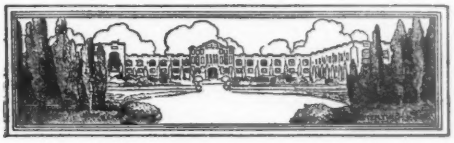
Common stocks which might prove profitable long term investments would include such issues as:

Westinghouse Electric & Manufacturing
American Tobacco
Allied Chemical & Dye
California Packing
International Harvester
Peoples Gas Light & Coke
Pullman Company
United Fruit
Woolworth
Mack Trucks

In their stock investments these people already had one which had gone wrong, and which had prejudiced them against railroad stocks. Fortunately the amount invested therein was a small proportion of their total funds, which shows the great value of diversification. Regarding their holdings of French bonds the Investment Editor wrote:

I am glad to say that I see no reason to fear that France will not pay all of her external obligations in full even though she may have to scale down her present currency and possibly reduce payments on her internal debts. Her external loans are such a small portion of her total obligations and the French people appreciate the value of credit abroad to such an extent that I believe they are not likely to consider any scaling down of their obligations to individual investors abroad.

THE WORLD'S WORKSHOP



So many of the interesting things in the making of a magazine and the publishing of books never get past the editors' desks that we have decided to devote a few pages every month to sharing some of them with our readers. These include an acquaintance with writers, letters from readers, and a miscellany of other things that may interest others as much as they interest us.—THE EDITORS.

AMONG the many pleasures of an editor is that of early reading of the manuscripts which later find their way into the magazine pages which are circulated even to distant parts of the world. On the desks in the World's Workshop now are many of the manuscripts for the September issue, and even in the midst of getting out this August issue it was impossible to resist the temptation to steal a few peeps at the new material.

Each new installment of the new Page letters is a refreshing surprise; even the reader who has perused hundreds of the letters of **Walter H. Page** finds in each missive he has never read before something new and refreshing. One of the great charms of the Page letters is the wide variety of subject, and the installment to be published in September discloses this charm in high degree.

The next and last installment of **Lord Grey's** memoirs is one of the best of the three. He deserts the factual narrative presented in the July and August issues and presents the conclusions based upon more than thirty years of experience in a diplomacy which had so many critical periods. "Whither is Europe moving?" he asks, and then answers the question.

It is fitting that so many important developments in aviation should fall about the time of Orville Wright's birthday, which is on the 19th of August, when he will be fifty-four years old. In recent issues we told of some of these new developments, and in this magazine we are able to tell more. In his Personality sketch of William B. Stout, "the man who sold the airplane to Ford," **Howard Mingos** tells many interesting things about this most important science of aëronautics. Mr. Mingos for years has been recognized as an authority on aviation, and to that knowledge he adds the priceless quality of presenting his facts in an arresting manner.

Another enthusiast on aviation is **Oscar Cesare,** the artist, who visited Orville Wright at Dayton and drew the picture which we use as a frontispiece. He pointed out that this portrait showed the small scars left on Mr. Wright's face as a result of his fall many years ago. We can find the scar over the left eye, but when it comes to the chin we cannot distinguish the scar from other lines, and therefore the Workshop is not attempting to tell WORLD'S WORK readers which is which.

C. E. Bechhoffer Roberts, who wrote the article entitled "The Almighty

Atom," is an English author who has written several books under the name C. E. Roberts.

The presentation in this issue of the first of two articles by **Knud Rasmussen,** the explorer, exemplifies one of the great pleasures of an editor in reading new manuscripts. This offering came into the Workshop at the last minute before publication of the magazine, but both the photographs and the text were such a delight that a place was made quickly in these pages for the first article. It is also an example of the central idea of those who labor in the Workshop that the best material available shall go into the making of each issue of the magazine. No good articles are held over for another number; the best in the Workshop at the time goes into the magazine.

It is interesting to note in the daily press recently, in connection with **Edward G. Lowry's** articles on the moving picture industry, that American films have been discussed in Parliament, and not exactly in a complimentary manner. Lord Lee of Fareham in a recent speech at a luncheon of the English-Speaking Union in London also criticized American films. According to the New York *Times*, Lord Lee said in part:

> I have never met in the course of my travels in America with the circumstances shown in American films as indicative of social life. From the United States' point of view as well of any other, to send us trash of this description is fraught with terrible circumstances not only in this country but in every part of the world.
>
> It is a fact that in almost savage countries American films which are supposed to represent American social life are used in the most evil way by Bolsheviks and other propagandists. I have found this true even in India, where I have heard it said in the bazaars: "Is this the way the sahibs live when they are at home?"
>
> This state of affairs cannot be attacked by counter-propaganda. We have no English films, so we are unable to represent ourselves. The papers cannot do much because few people read them, whereas the language of the eyes is the same the world over. I think if the English-Speaking Union both here and in America fosters films representing the actual national mind they will be doing a great work in the interest of education and go far to reduce all sorts of dangers to decent civilization throughout the world.

Albert Edward Wiggam, who writes the article in this issue on "The Religion of the Scientist," is the author of "The New Decalogue of Science" and "The Fruit of the Family Tree," among the most popular books of their kind. Many of the thoughts which are incorporated in the article in this issue of the magazine came to him while he was writing a new introduction for the Vernon Edition of "The New Decalogue of Science," and a member of the editorial staff visited Mr. Wiggam just as he was taking the last sheet of copy from a somewhat rickety typewriter. The manuscript touched so thoroughly the question of the relationship of science and religion, now a subject in the public mind because of the Tennessee evolution trial and the wars in the churches, that Mr. Wiggam acceded to a request to amplify some of his thoughts in this magazine article. The article discloses Mr. Wiggam at his best as a thinker and writer and, reading it, those who sit in the Workshop are willing to admit that **Professor E. M. East,** another of our WORLD'S WORK contributors, was correct when he said that "Wiggam has the soul of an artist and the mental attitude of a man of science."

There is no doubt of the great public interest in the relationship of science and religion, and the WORLD'S WORK every month receives scores of letters touching on either or both subjects. In this issue **Dr. Harry Pratt Judson,** President Emeritus of the University of Chicago, presents thoughts suggested to him by **Rollin Lynde Hartt's** recent article entitled "Where Do We Get Our Preach-

ers?" Other letters have been received on the same subject, notably the following:

To the Editor, WORLD'S WORK.

Sir: I have read the article on "Where Do We Get Our Preachers," by Rollin Lynde Hartt with interest and believe that the charge he voices against the Christian ministry is largely true. Christianity has too few able defenders and its opponents are gaining ground. There is undoubtedly a life and death struggle going between science and religion and the latter is yielding and giving up one vantage point after another. Its so-called leaders are leaders of a retreat.

The weakness in the contest, however, does not appear to be all on one side. The attacking party seems to be open to quite as serious charges as the defenders. The most dangerous enemies of Christianity are in the pulpits. Many of them lack weapons of defense, some are hypocritical opportunists, some are traitors within the camps. The opponents of Christianity outside the pulpits are entirely within their rights in the stand they take, but have an amazing conceit of knowledge that they do not possess. Both contentions rest, in the last analysis, on certain assumptions that have not been proved and cannot be proved.

The many revolutions in human thought, referred to in the article, have been passing phases. The philosophers have traveled in circles and have come out of the same holes they went in.

This is a protest against the conceit of knowledge that seems to afflict many pseudo-scientists and opponents of Christianity and leads them to regard all who differ with them as sufferers from a mental inferiority complex. It may also be regarded as a protest against stupidity in the selection, training, and support of defenders of the faith. The Peter Mullins type of ministers is far too prevalent, and the intelligent, courageous preachers of a gospel in which they believe and which they can ably defend are all too few.

A. C. HILL.

Another letter was from W. Franklin Harkey, who, it is interesting to note, contributes an opinion diametrically opposite to Mr. Hill's. "Has any generation," he asks, "had as many able and distinguished clergymen as the present?" This is a question that possesses certain subtleties. One is, of course, tempted at once to murmur, "How about that of Wesley and Whitefield?" The points of view illustrated by these two letters are typical, we believe, of the bulk of the public opinion in this country that is divided upon the question on which Mr. Hartt writes and on kindred subjects.

To the Editor, WORLD'S WORK.

Sir: Your itinerant writer, Rollin Lynde Hartt, who went up and down the country, stopping in newspaper offices, visiting in big cities, interviewing reporters, wet mayors (also—give him the credit—talking with some prohibitionists), now turns to the defects of the theological seminaries and those who are enrolled in them. Manifestly, prohibition can only be appraised by the great blessings it has brought and not by a cursory trip through the night life of big cities. But, why scold theological seminaries?

In the first place, a candidate for the ministry is supposed to have a mind of his own. If one went into the seminary thirty years ago, no one forced him, nor do professors to-day force "pious young men" to enter. Your writer in one paragraph confesses that the clergy to-day have immense and alarming power in politics, and then goes on to speak of how impractical and inefficient, not to say uneducated and unfit, the ministry is. Is it better to have men of the type of the ministry exerting a beneficent influence upon our political life, or allow an unscrupulous political gang, such as American politics has experienced at times, to control legislation? Is it not true that the clergy are always in the forefront of every high enterprise to alleviate suffering—now working for temperance, and now for peace?

Seminaries are not as good as they should be. That has been acknowledged very frankly, but has any generation ever had as many able and distinguished clergymen as the present?

Give us articles that are constructive.

W. FRANKLIN HARKEY,
Minister, The First United Presbyterian Church of Houston, Pennsylvania.

Our recent articles on the wild animals of Africa, written by **Martin Johnson,** and illustrated by his superb photographs, were read with interest by the pupils in the public schools at Lincoln, Nebraska, one among many places where the articles

were enthusiastically received. For in Lincoln each student maintains correspondence with a student in some foreign country, and it happens that one of the boys just then was corresponding with a lad in the government school at Nakuru in Kenya Colony, Africa, who is almost as good a writer as Martin Johnson, who lives near him. Our little friend in Lincoln sent us the letter—all about hippos near the school grounds and, well, here is the letter

DEAR FRIEND AARON:

Many thanks for your letter. I will be only too glad to start a correspondence with you. I am a pupil at the government school, Nakuru.

The town is a small place, but it is in the center of the Rongai, Solai, and Molo districts, and it is getting larger. We are about seven thousand feet above sea level and although we are practically on the equator we are very cool. There is a soda lake to the south of the town, and we generally go down to it for half-term. There are a couple of boats, but if they are left down at the lake there is a possibility of them being broken by the hippopotamus. There are many flamingoes on the shores, and geese and duck are quite abundant.

All around the shore there are farms and practically all the land between the town and the lake has been plowed up, but the other parts are not of any use as they are mountains.

Menengai is an extinct volcano and there is a very large crater. On the slopes of the hill, but more to the crater side, which is that farthest from the town, there are many buck. At night hyænas come about, and we practice at making their howl, but there are not many of us who can, and if we do they just clear out and do not come back for a couple of nights. Every year there is a large grass fire which burns all the grass on the slopes and it is then that we see the most game.

Some of the townsfolk have started scouts up here, but they nearly always fail to come up and then the scouts are stopped and it is only the guides who seem to prosper.

We have a show here about every two years, and the last one brought our school a lot of certificates for the exhibits we put in. The scouts were doing well then and nine of us helped at the showground, and sold different things as well as run errands and help in the ring. At the last show there was a cinematograph man and he was taking photos.

We have entered the Cambridge examinations for the last three years and we are entering again this year. So far we have only had one failure, but we have still to wait for the results of the last one, which was held in last December. This year we have to study the geography of North America for the Cambridge exam and in our period of history is the Declaration of Independence which freed your country from Great Britain.

I will be expecting a reply from you and will eagerly await it. In case of my leaving this school I will write and inform you giving you my address.

I remain,

Your Kenya friend,
HUBERT G. WATKINS.

In the June issue of the magazine the two full-page photographs of Miami Beach, pages 182 and 183, in the article entitled "The Gold Rush to Florida," should have been marked Copyright by Richard B. Hoit of Miami, Florida. Such omissions always are distressing, even when less important than this, and we hasten to make all due acknowledgment.

DR. FOSDICK

Beginning in September, Dr. Fosdick creates a monthly department—RELIGION AND LIFE—in Harper's. These articles will have nothing to do with creeds and controversies, but will deal with religion as an indispensable need in daily life—an urgent present power, desperately wanted by men and women.

The Contents for SEPTEMBER

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by Katharine F. Gerould

THE WIFE OF ABRAHAM LINCOLN
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POEMS:
by Edna St. Vincent Millay, etc.

CHRISTOPHER MORLEY

THUNDER ON THE LEFT, Christopher Morley's new novel, puts its author at the top of contemporary writers. It belongs in no known category: its imaginative intensity is overwhelming; its beauty is breath-taking; its comedy breaks your heart; it is far ahead of WHERE THE BLUE BEGINS.

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NAME.....*ADDRESS*.....

An Investment Marketplace

THIS Department offers a meeting place for readers and bankers. Bankers who wish to use these pages are investigated by us, and each advertisement is supervised before acceptance. We make every effort to accept only the offerings of safe securities and the announcements of responsible and reliable banking houses.

The Readers' Service Bureau offers its service without charge to all readers who desire information regarding investments. All inquiries are answered by the Investment Editor by mail. Postage should be enclosed for reply. Advice regarding speculative operations will not be given.

Address Readers' Service Bureau, World's Work, 120 W. 32nd Street, New York City

INVESTMENT QUESTIONS AND ANSWERS

DURING the last month the Readers' Service Bureau received requests for suggestions from a man in New York City who wished to invest $6,000 in high grade bonds to yield 6 per cent. or better; from a man in Maine who wished a list of preferred stocks considered equal in merit to Standard Oil of New Jersey preferred; from a man in Seattle who wanted advice on investing in common stocks and from another man in New York State who wished to invest $7,000 in bonds, preferred stocks, and common stocks.

$6,000 IN BONDS

THE New York City man said he preferred bonds selling at par or below and had in mind as a possibility Anaconda Copper 6s of 1953. In reply to him the Investment Editor wrote:

For an investment of $6,000 in bonds to give a yield of 6 per cent. one has to take a little risk with his money at this time, but we believe the following diversified list would fit your requirements both as to rate of return and the safety of the investment:

Anaconda Copper 1st consolidated 6s due 1953. Selling at	100½
Chicago, Rock Island & Pac. refunding 4s due 1934	88
Kingdom of Norway 6s due 1943	100½
Argentine Republic 6s due 1957	96½
St. Louis-Southwestern 1st Term. 5s due 1952	88¼
American Power & Light 6s due 2016	97⅝
Great Northern 7s due 1936	110

PREFERRED STOCKS

I HAVE a few shares of Standard Oil (N. J.) preferred stock," wrote the Maine man, "which will probably be called for redemption within the year at $115. Will you suggest a few 7 per cent. preferred stocks which you consider of equal merit. In this connection I would like to ask about Southern California 7 per cent. preferred, whether it is in effect a second preferred stock or whether the priority of the 8 per cent. preferred applies only to the participating feature."

To this man the reply was: Other preferred stocks which seem equally as safe as the Standard Oil of New Jersey preferred are:

American Smelting & Refining preferred
U. S. Steel preferred
U. S. Cast Iron Pipe & Foundry preferred
Chicago & Northwestern preferred

and possibly American Sugar Refining preferred and Chicago Rock Island and Pacific preferred. These by no means exhaust the list, and Southern California Edison Company 7 per cent. preferred stock should have a high position in it. The original preferred stock of this company, which is the participating issue, is entitled to 5 per cent. cumulative dividends over both the preferred and common stock and then participates with the preferred up to 7 per cent. which is also cumulative and then participates with the common in any payments above 7 per cent. on both stocks. It stands ahead of the preferred in its claim on assets and also participates with the common in any distribution of assets.

COMMON STOCKS

RECENT writings indicating the long-term investment possibilities of common stocks have made a strong appeal to many people. The Seattle man wrote: "As an old reader of your valuable paper, I will be greatly obliged for your advice on investing $1,000 in stocks. I am a young man, and this amount is now gaining 4 per cent. in a savings account. It seems an interesting plan to buy 10 different stocks and I feel that the experience gained in investing in such a manner would be valuable when the time comes for making larger investments."

But the Investment Editor suggested that he wait for lower prices before undertaking this form of investment. The reply was as follows:

Your scheme of investing $1,000 in ten different stocks seems a good one, but we have some doubt whether the present is a good time to undertake such an operation. Stock prices, particularly those of industrial stocks, are now higher than they ever have been and it might be well for you to keep your money in a savings bank at 4 per cent. and await the next break in the stock market before you undertake your speculative operations. The chances for largest profits are in the industrial stocks as they possess the possibility of growing with the growth of the country more than do the railroads, but at the present time the railroad stocks seem to be selling on a more attractive basis than the industrials, and the writer is inclined to the view that a selection from among the railroad issues would be the best for one to make if bent on undertaking at this time such an operation as you have in mind.

Sun-Dial Gossip

For the Last Month

IN TWENTY-FIVE years," says M. Pilon, "a man may possibly become expert in the art."

IN A small room at one end of the Country Life Press M. Pilon and his colleague, M. Hardy, spend their days adding to a heritage some twenty-eight centuries old. With hand and brain and eye they labor, and their work is good to see.

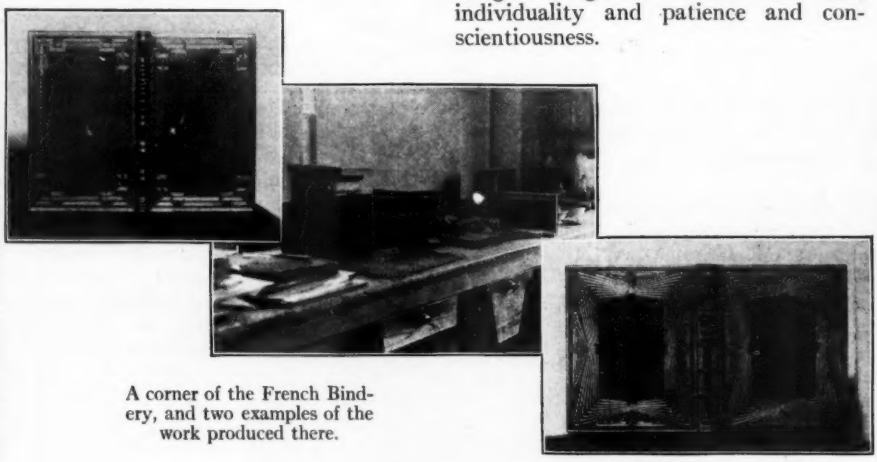
Binding for a life of Dante.

ACTUAL experience as well as a host of seemly editorials from the pens of those mildly didactic gentlemen who reap their tens of thousands by virtue of a fitness for pounding the platitude into the multitude has taught us of the human race that an uncouth exterior often conceals a soul without alloy. This great truth applies even more exactly to books, whose bodies for the greater part serve only to hold the soul together, without adding to it anything of loveliness. MM. Pilon and Hardy are engaged in disproving the axiom, at least so far as books are concerned.

FRENCH binding, they call it, this art of clothing beauty in beauty. It is part of a long tradition—naturally, not so long as some others, for the earliest inscriptions on rock-faces, needing no covers, failed to spur the inventiveness of the potential binder, but still with a family tree of impressive height. The first known ancestors made their appearance in Assyria about 800 B. C. in the form of clay shells for tablets of records. Those might be called the shirt-sleeve days of the family. Perhaps it reached the height of its magnificence between the seventh and sixteenth centuries A. D., however. Those were the days of the illuminated manuscript, with its covers of jewels, enamels, and carved ivory, when to lend a man a book must have been a token of firm friendship and of faith indeed. But it was only after

the advent of the printing press that leather bindings began to receive the attention that is their due.

THOSE who mourn the vanished romance of the craft and the guild should learn more of the intricacies of the French Bindery; for it tolerates no mechanical aids to swiftness, to quantity production. Mention machinery to M. Pilon and watch his face; it is interesting to see whether amusement or disgust will finally predominate.



A corner of the French Bindery, and two examples of the work produced there.

THE world may be better for the fact that it is possible to turn out books by the hundred thousand in the course of twenty-four hours; but assuredly it is no worse for the fact that pride of workmanship will hold a man for three months at the binding of one volume—the length of time actually spent by M. Pilon on the covers of one of Caxton's earlier productions. That, of course, was something out of the ordinary, representing the peak of the binder's skill; a simple piece of work can be completed in from three days on. But what goes into even the simplest! Leather from France, trairing from famous masters, years of exacting practice, strange-looking tools in numberless array wielded by deft hands, designs thought out with infinite care, individuality and patience and conscientiousness.

THE illustrations on these pages are only pallid reproductions, but they may serve to convey some slight idea of the work that is being done from day to day in that small room. You who have books particularly precious, either through content or through association, will do well to make the acquaintance of the gentlemen of the French Bindery in Garden City.